NOT an official Amstrad publication!!

# AMSTRAD ACTION

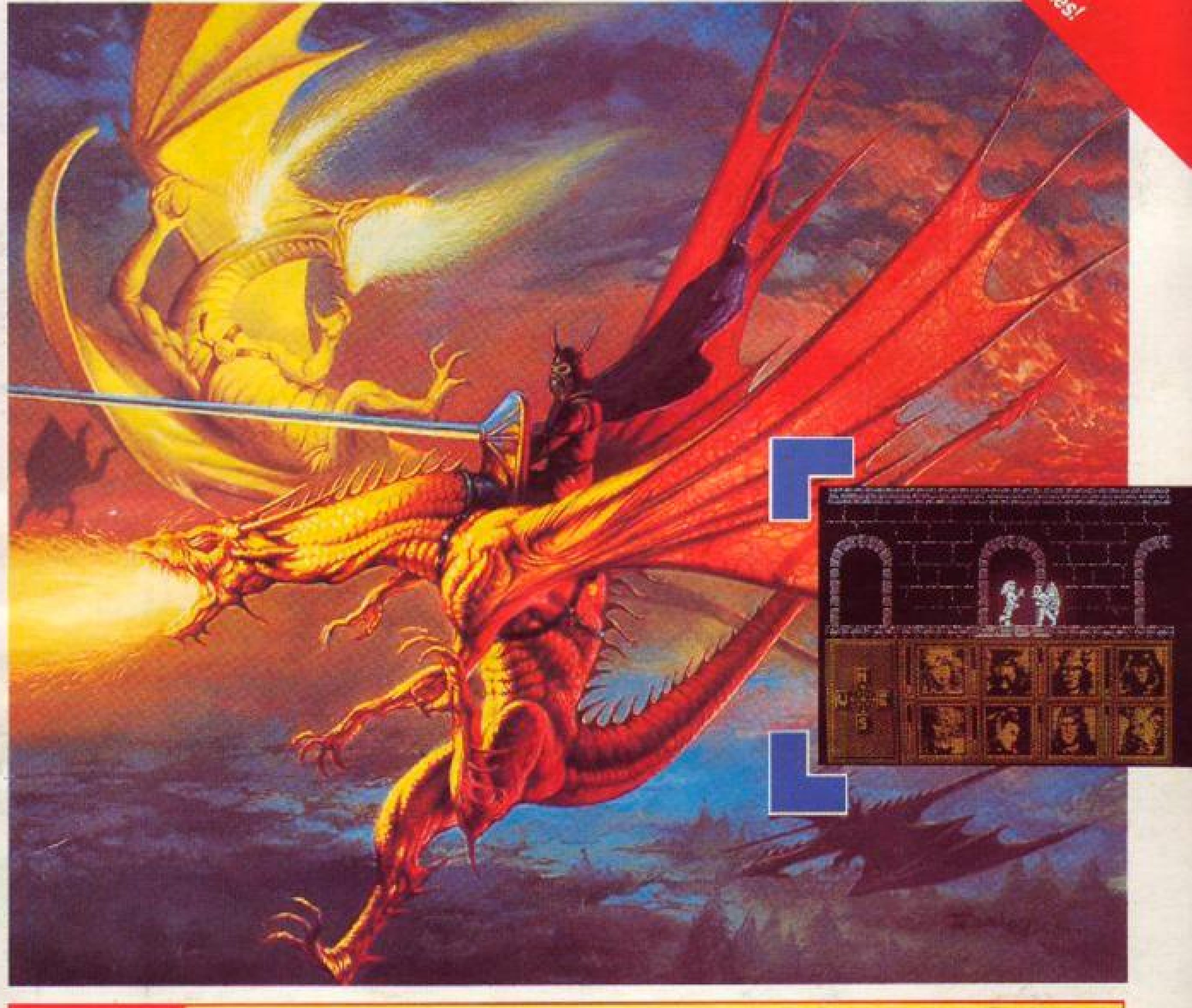
THE MOULD-BREAKING MAGAZINE FROM FUTURE PUBLISHING

BRITAIN'S LEADING MAGAZINE FOR THE AMSTRAD CPC 464, 664 AND 6128

ISSUE 37 ● OCTOBER 1988 ● £1.50

**WIN** Second drive, Designer modem, Micronet subscription and dozens of other prizes!

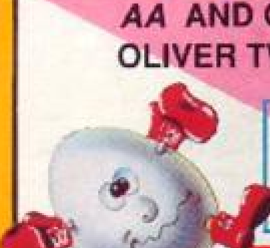
## HEROES OF THE LANCE



**Full review *plus* great competition!**

## THIRD BIRTHDAY SPECIAL CASSETTE!

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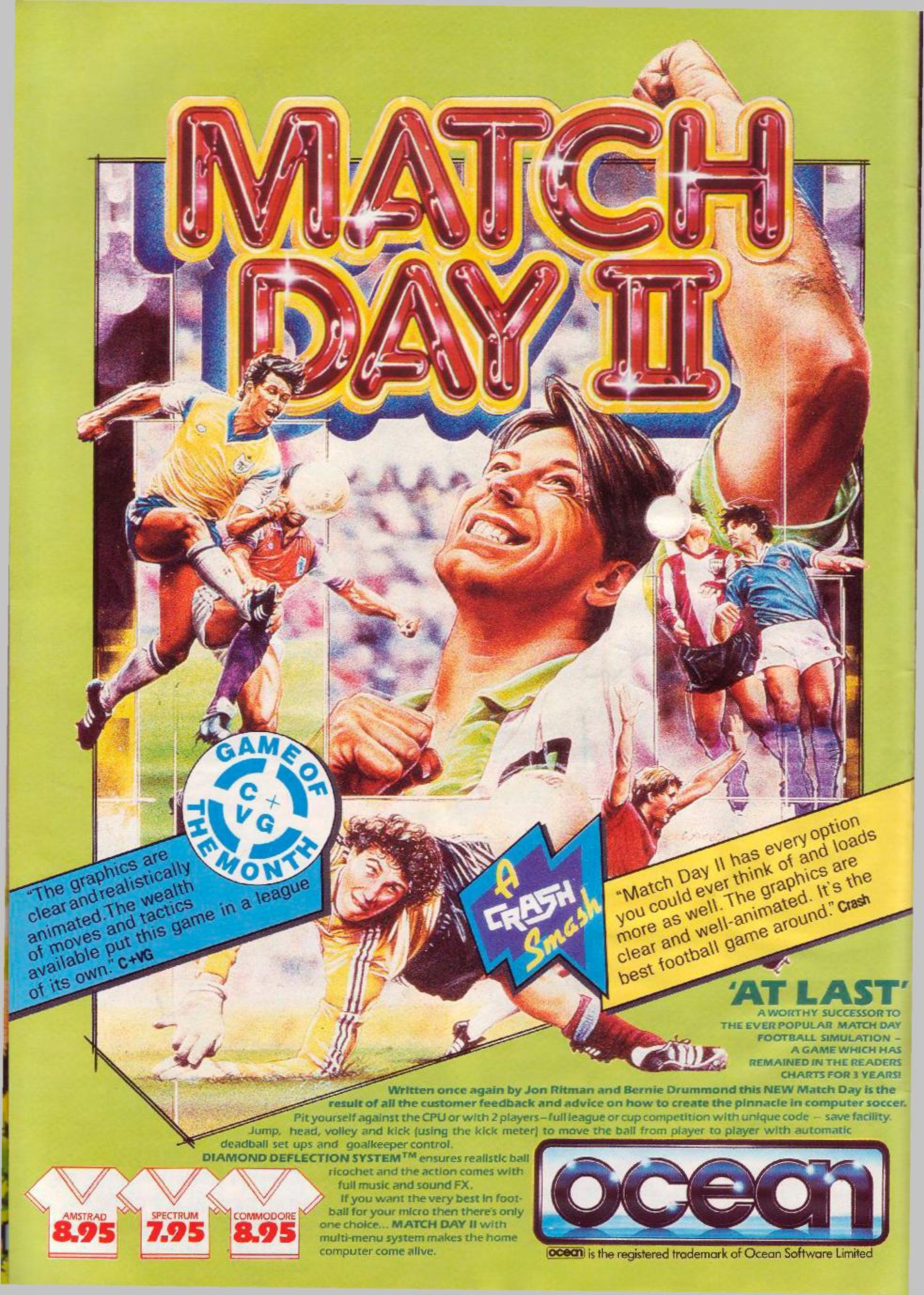
### MICROASSEMBLER
● TRANSLATE assembly language into machine code

### DISK FORMATTER
● RECOVER corrupted disks!

### *PLUS* HELP FILES
● UNDERSTAND what this is all about!



inside: 36 *AA* teeshirts must be won!


MATCH DAY II
GAME OF THE MONTH C+VG
"The graphics are clear and realistically animated. The wealth of moves and tactics available put this game in a league of its own." C+VG
A CRASH Smash
"Match Day II has every option you could ever think of and loads more as well. The graphics are clear and well-animated. It's the best football game around." Crash
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Pit yourself against the CPU or with 2 players – full league or cup competition with unique code – save facility.
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ALIEN FORCES WREAK HAVOC ON OUR PLANET. THE EARTH TORN AND BLASTED IN WHAT SEEMED THE FINAL WAR. BUT ENOUGH SURVIVED TO UPHOLD THE LAWS OF JUSTICE AND REVENGE. NOW ONE MAN MUST FACE THE FINAL ENEMY. HE IS THE VINDICATOR. ACROSS A TORTURED LANDSCAPE AGAINST INCREDIBLE ODDS HE MUST BATTLE THROUGH TO THE ENEMY STRONGHOLD, DOWN INTO MAZE LIKE CORRIDORS FILLED WITH MUTATED GUARDIANS UNTIL HE REACHES THE INNER SANCTUM OF THE DARK OVERLORD TO STRIKE THE FINAL BLOW OF RETRIBUTION. BECOME THE VINDICATOR IN THIS MULTI-SECTIONED GAME OF SURVIVAL AS STATE-OF-THE-ART GRAPHICS TAKE YOU ON THE ADVENTURE OF A LIFETIME. STRIKE BACK, BEFORE IT'S TOO LATE!
SALAMANDER
Imagine
..the name of the game
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# THE LINE-UP

## AMSTRAD ACTION ● SEPTEMBER 1988





# INTERACTION

*FOR* THE PEOPLE ● *BY* THE PEOPLE



# WRAPPING UP

THINGS TO BUY ● BYE!



# You ain't seen nothing yet!

**Well, here it is: *AA*'s third birthday issue. We celebrate with a very special cover cassette and some tremendous prizes in our great competition – and sales figures showing that more people are buying the magazine you are holding than ever before! We're pretty chuffed about that, and with your assistance, co-operation and loyalty we firmly expect to be around for a long time yet.**

**There are some great games titles coming out on the CPC in time for Christmas – not least of them *Heroes of the Lance*, reviewed in full in this issue. There are other things in store too, which we'll tell you about as soon as we possibly can.**

**All in all it's been a remarkable month here at *AA*. Stay with us, won't you, and join in the fun?**

Steve

***Oops! Somewhere along the line something went wrong last month – as about 35,095 of you seem to have noticed. September was issue 36, not 35 (again!) as we said.***


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ABC
MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS
35,095
*January – June 1988*

# Will the Olympics come to Manchester?

# WE WILL!

The gold medalist of computer shows is on its way back to Manchester's imposing G–MEX centre.

Amstrad and more than 70 other exhibitors will be displaying the latest products for you to try before you buy.

Need some technical help? Leading experts will be on hand throughout the three days to answer all your queries.

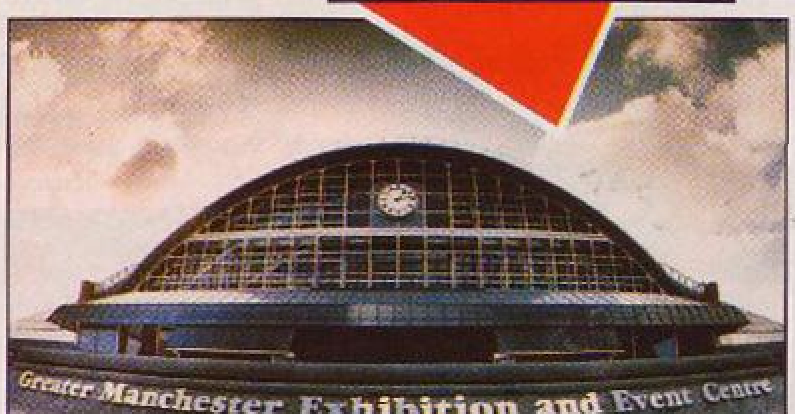
With hundreds of special show offers available, every visitor could end up a financial winner.

You can even save yourself a £1 before you get there by using the advanced ticket order form.

## How to get there

Driving? G–MEX is in the city centre – only one mile from the M602 – with ample parking available. It is also within easy reach of Victoria and Piccadilly railway stations, and Chorlton Street bus station.

The Northern AMSTRAD™ COMPUTER SHOW




## October 21–23, 1988

**FRI–SAT 10am–6pm — SUN 10am–4pm**

AMSTRAD ST.

Be prepared for a warm welcome in "Amstrad Street" – a brand new show feature area, specially constructed for the event.

Take a stroll down the street and see how Amstrad machines are playing a major role behind the scenes in the current northern boom.

- Drop in on the "Amstrad Arms" our answer to the "Rover's Return".
- Visit "Amstrad School" and observe how students in the north west are benefitting from the new technology.
- Check out what's going on in a local company where Amstrad machines are providing them with the competitive edge.
- Inspect the Amstrad innovation workshop.

And much, much more.

**It will be an unforgettable experience.**

## Advance ticket order

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**Post to: *Amstrad Show Tickets, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.***

☐ Cheque enclosed made payable to Database Publications Ltd.
☐ Please debit my credit card account
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☐ Adult tickets at £4 (save £1) £..........
☐ U/16s tickets at £2.50 (save £1) £..........
TOTAL £..........

***ADMISSION AT DOOR***
***ADULTS £5 U/16s £3.50***

Advance ticket orders must be received by Wed, Oct 12, 1988.

SAVE £1

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DATABASE EXHIBITIONS

A529

# REACTION

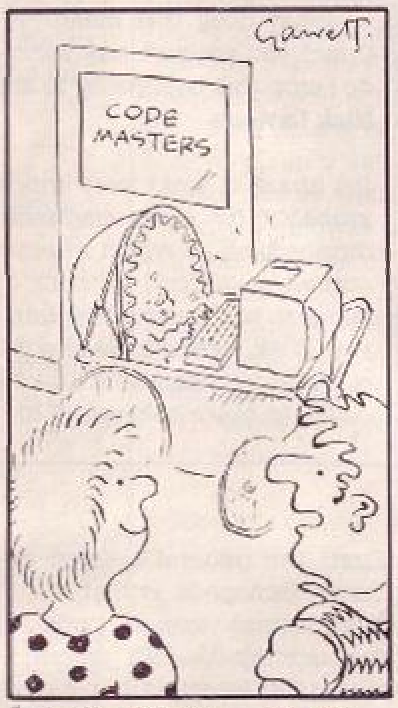
## *Lots of doom and gloom this month, for some reason*

### Gloom and doom

The interest of software houses in CPC games, it seems, is dying rapidly. Some examples: US Gold produced the dreadful *Outrun*. *Bionic Commandos* is in monocolour obviously ported over from the Spectrum, as was *Super Hang-On* from Activision. *Crazy Cars* from Titus had one level only while the other version had three. The Big Apple hopes to sell 250,000 games over all formats except Amstrad. Even Elite's latest *Hopping Mad* was a poor effort (compare it with the time they took over *Paperboy*).

Of course all Amstrad owners have to live with seeing the other format versions on the shelves weeks or even months beforehand.

The 6128 is an excellent computer and real value for money, but has never been given the software support it deserves. So with the upsurge in the 16-bit format this situation will get worse not better, as software houses with their 'loadsamoney' mentality will and do view the Amstrad as a poor return for their time and effort. Maybe it is no surprise to see 90% of the titles in the Amstrad top ten are budget




"IS IT JUST ME – OR DO PROGRAMMERS THESE DAYS SEEM TO BE EVEN YOUNGER"

releases! Do you think this Christmas will be the final fling for any worthwhile Amstrad software or am I being too pessimistic?

**Steve Seager**
**Royston, Herts**

*You can't really complain about them doing it for the money – they are in business. They'll only change if they know they're losing out, so it's up to CPC owners to make it known they're sick to death of badly converted efforts.*

*Let the 16 bitters have their honeymoon: tomorrow they'll be just another breed of home computer, fighting for a slice of the market.*

### Penpals find a home

**We're always getting letters from people who want *AA* readers as penpals (and who can blame them?), but we haven't been able to print them all.**

**Now we think we've found the perfect solution: *Helpline*. All penpal requests will automatically be included there, and of course will stay on the roster until you or your postman decide enough is enough. Hope that makes things easier for you would-be penpals!**

### Could try harder

People do go on about how difficult games are becoming. I'm sure I'm not alone in saying that all the complexity is rapidly going out of games, and that the challenge is no longer there. Long term, non-repetitive games are dying out. The first day target is rapidly becoming a joke, and must, to most people, be a matter of a couple of minutes work. Even Incentive's brilliant and complex game *Dark Side* gave up all but the last telepod crystal in a mere four hours play (though Freescape does turn out to be all it is said to be). I hope software houses don't listen to the people wanting easy games.

**James Moffatt**
**BFPO 20**

*Last month we had a letter from a games player complaining about the difficulty level: now one about the simplicity level. Just goes to show you can't please all the people all the time.*

### A little bitter philosophy

Upon finding myself drawn more and more towards my computer room due to several unfortunate occurrences, I realised that *the computer is an escape from reality*. I play on the computer so I can lock myself off from the outside world and forget my troubles, of which there are many. I can gain immense satisfaction from beating a few heads in – from enjoying myself and at the same time being able to lighten the weight on my mind.

**S Jones**
**Latimer, Bucks**

*Sounds right gloomy to us. Surely not all us CPC'ers are desperate reality-escapists?*

*Still, perhaps the software winner voucher might cheer you up a little!*

### Amstrad sea sense

I am excited about the DIY amplifier, but do you have to unplug other add-ons to use it? I saw two speech synthesisers advertised. After much thought I bought the Amstrad one, but I could not use CPM, so I wrote to Amstrad and they told me to unplug the speech synth when I was going to use CPM.

I am a 70 year old seaman, and all those years ago, when we were supposed to be stupid, nobody cast off a main halyard from a pin because they were setting a top'sl. It was rerouted through sheaves to another pin.

**James Garsides**
**Airdrie, Scotland**

*You can leave the amplifier plugged in, and it won't interfere with the operations at all. I wouldn't leave it switched on though – the battery would go flat after a time. A small modification to allow the project to run off the Amstrad's power supply will be published in a future issue.*

● ***Reaction, Amstrad Action*, 4 Queen Street, Bath BA1 1EJ.**
**Note the address for all mail-order enquiries and orders is: Clare Bates, The Old Barn, Brunel Precinct, Somerton, Somerset TA11 7PY, while all subscription matters (except orders – see the back of the magazine) are handled by Avon Direct Mail, PO Box 1, Portishead, Bristol BF20 9EG.**

### Oh yes you are...

I am writing to complain about Bob Adams' letter (*AA*35). He appears to believe all CPC users under 16 are stupid games freaks with nothing better to do than sit in front of their moniters all day zapping aliens. Well, Mr Smartypants Adams, it gives me great pleasure to inform you that I am 11 and I don't sit in front of my 464 zapping monstertroids and thingtrons (though if you were on the screen I may oblige). I use my Amstrad to teach myself Basic and even the odd bit of machine code (yes, machine code, it may surprise you, but I do have the odd brain cell here or there). So, Mr Adams the younger generation may not be as wealthy as you, but we put our machines to good use without having to spend your average £14.66 per month, so now you know what to do with your 12% extra, don't you?

**John Winter**
**Stafford**

*Charming. Look here, John, can't you see that you're at least as 'bad' as Mr Adams if you descend to this level of name-calling and pettiness? Why can't we have disagreements between ourselves without resorting to pulling hair and pinching? As we said last month, we need each other, and* **every** *CPC user is valuable to the future of the machine.*

### J. Public thwarted

I have been trying for months to get the free software handbook published by Peopletalk Publishers from my local library.

I have failed miserably: the library 'phoned the supplier direct and was told they only supply lots of 30. They do not deal in single copies therefore the book is not available to Joe Public.

Your article led me into a very long-winded fruitless exercise. The chief librarian at my local library said he would be interested in the shape of your answer.

**P J Morley**
**Peterborough**

*Davis/Rubin, it is true, are no longer importing the* Free Software Handbook *– though they used to. I suggest your librarian gets in touch with Peopletalk Associates direct (PO Box 863652, Plano, Texas 75086). Alternatively, steal young Richard Monteiro's copy.*

*If anyone knows of another source, we'd be delighted to hear from you.*

### A frayed knot

Is it possible using Multiface II to copy games like *Gauntlet* and *Outrun* where each level is loaded when the one before is finished?

**Donald Mackerracher**
**Portrush, Co Antrim**

*Afraid not, because the disk or cassette must be accessed during play.*

### Renegade Pilgrim

I have just bought *Target Renegade* and I thoroughly enjoy it especially with two players. The graphics, sound and movement are excellent but I have one complaint. It says in the instructions that at 50,000 points and every 100,000 points after that you get an extra life.

It does this with player 1 but no matter how much score player 2 gets he doesn't get an extra life, so player 2 doesn't stand a chance of getting past level 5. Is this a bug or is it meant to be like this?

Also, when is *Pilg's* programming coming back?

**Chris Marland**

### Short. Sweet. But not cheap

Where can I buy a user manual?

**B Hfuhruhurr**
**Witton Gilbert, Durham**

*You can buy user manuals for the 464, 664 and 6128 from CPC, 194-200 North Road, Preston, Lancashire PR1 IYP ☎* ***(0772) 555034.*** *The price, which would bring tears to a glass eye, is £20 for each manual. Send cheques with order and be sure to specify which you require!*

*And they sell service manuals at £5 (464) and £8 (664/6128).*

### Corruption exposed

About four months ago I wrote a program which used the keyword *Chainmerge* to operate. The other day when I came to use the program after a while I got the `read fail` disk error message.

I have not got many disk utilities so I ran CPM and verified the disk, under Diskit It told me there was a disk error on track 2 sectors 0-8 and there was missing address mark, within system track.

What does this mean? Is my CF2 corrupted, if so how? Could you suggest any ways of recovering my program? How do I stop this happneing to any of my other programs?

**Nick Lawson**

*I'm afraid it looks very much as if your CF2 is corrupted – probably by stray magnetics, dust, heat on simply being dropped, all of which affect magnetic disks. Recovery of the section is difficult without a working knowledge of disks. I suggest you peruse* Helpline. *Although it's no consolation to you, Nick, perhaps we should take this opportunity to remind others once again that one can never tell when it will happen – always make backups of the masters you treasure.*

*First: the general opinion on* Target Renegade *is that it's a bug. Second: turn at once to this month's Ye Pilg, wherein thou shalt be mightily pleased (yes, I'm sorry too, but they talk like that over there).*

### Oops apologies

I feel I had to put pen to paper. In *AA*35's *Cheat Mode* you state to Phil Howard that he should, 'Move over and give someone else a chance'. I think this a very unfair statement to make to Phil, as there are hundreds of regular readers like me who depend on his excellent pokes. Without people like Mr Howard and Peter Featherstone there would be even fewer pokes in *AA*.

I know your reply to this will be, 'Yes, but they win games for their work'. Maybe they do – but how about printing a big thank-you from all your readers to these two special hackers?

**P. Hall,**
**Basildon, Essex**

*Oh dear. For those of you who didn't see the offending remarks, what we actually said was: 'Really Phil, you ought to move over and give someone else a chance (mind you, it's all good stuff!)'. This was intended to be a joke, and we're sincerely sorry if anyone took offence – we know Phil didn't, because he's already sent in some more pokes, and we hope he'll be sending them in and getting them printed for many, many issues to come.*

*What we were trying to do was simultaneously to congratulate Phil for the quality and quantity of his work – which we beg you to believe is appreciated – and at the same time to suggest that other readers should not think we have no time for them.*

### Butter problem

I was interested in the poke by Phil Howard for *Bubble Bobble* giving infinite lives. This works fine for the 79 levels but you then have to rewind the tape for the 80th and fine level and the poke doesn't work.

"WHY DIDN'T SOMEONE LET US KNOW GURNETT WAS ON HOLIDAY?"

Is there any way of destroying the dreaded Bonner who appears on the final level. If you or anyone out there can help I would be very grateful as I think I am beginning to develop brain damage through head-butting the monitor.
**G Hanson**

## Giving a sucker...

Can you help me please! My joystick is a Cheetah MachI+ Microswitch Joystick and one of my suckers which sticks to the table (the four black things on the bottom of the joystick), has broken the knob off and it won't fit back on.

I wrote to them about three weeks ago but nothing came back.
**Carl Wilson**
**Kenilworth, Warks**

*We spoke to them and they have no trace of your letter. Still, rite to them enclosing an SAE and they promise they'll swiftly give succour to your suckerless stick.*

*Perhaps when you wrote to them you forgot to enclose an SAE?*

## Race against type

On page 35 of the September *AA* (surely No 36 not No 35 on the cover *(yes yes, alright, don't go on about it – blushing ed)*) you say that the *Race Against Time* has two cassettes. I bought my copy in the local Woolworths a few months ago for the full price but I only have one cassette the same both sides. Have I the right to complain or are you wrong in your statement?

*yes, it's true, there's only one cassette in the* Race Against Time.

*I suggest you peruse the AA small ads or similar for a secondhand printer and Tasword 464 (the tape version). Tasman (☎ 0532 438301) supply this for £19.95. Don't bother with a disk drive until you really need it. A typewriter is cheaper as a one off, while the word processor program represents an investment.*

## And finally, something cheerful!

Our local radio station (Radio City) had a competition, the prize being a trip to Ocean Software plus 21 games on disk. So both myself and a colleague entered and won.

Our host was the PR man Gary Bracey, whose assistant met us at the railway station and took us back to Ocean, where we watched (eyes popping) all the techniques that made up a program. We are both programmers but we saw things that we would never have dreamed of.

We saw how a game started off as just an idea. Then several programmers who were proficient in their own field coded the game sections, and pieced them together to form the complete version. They tweak up the 'playability' of the game and tailor it to what is believed to be the finished version ready for production. We saw music development, Art and graphic, sprite handling, you name it, we saw it.

Just before we were due to leave our railfare was refunded back to us and we were given a selection of games 'T' shirts and a priceless 'Ocean' mug. The director Colin Stokes wished to see us before we left to see how we found our tour of Ocean and we enjoyed ourselves! We discussed future plans, current plans, latest developments etc. one of them being Platoon and how Ocean won the film tie in rights. Not only did we get the game, we were given the LP sound track each plus a video each of the films.

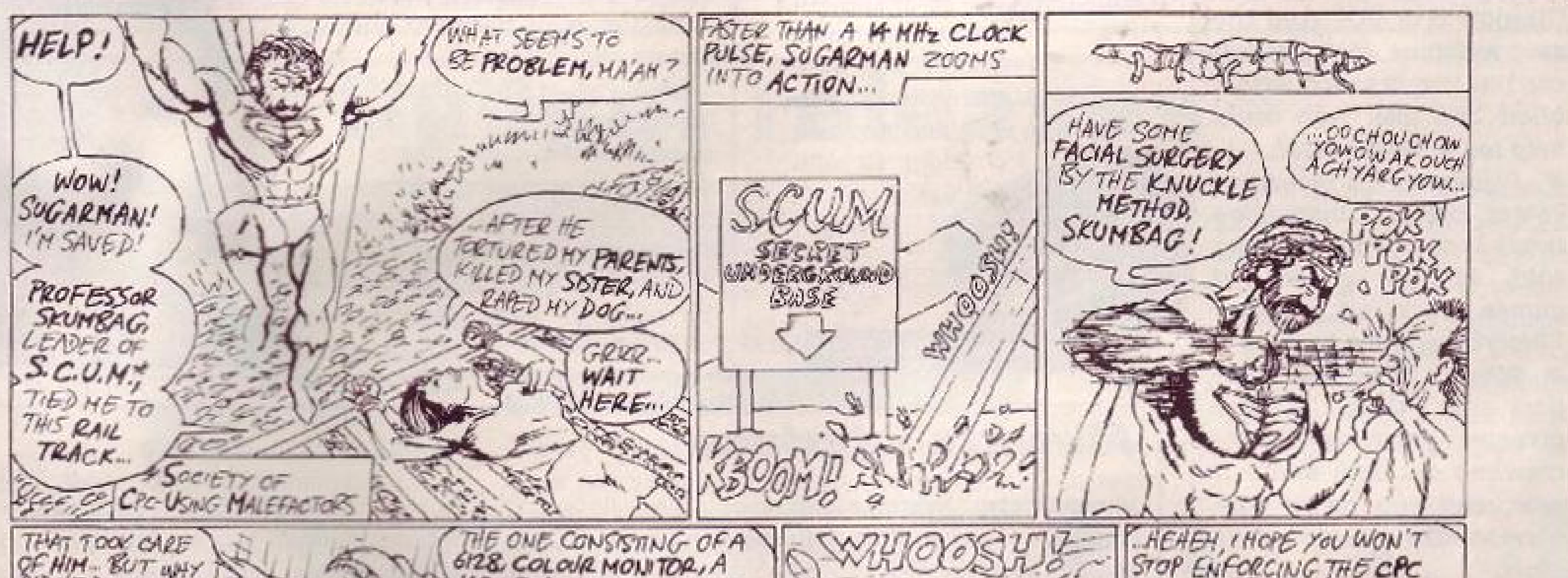
Thank you Ocean Software and everybody there who made our visit such a happy and memorable one.
**Grahame Campion & Keith Nicholson**
**Liverpool**

*Nice one Ocean – you've made friends for life.*

I am sorry this is not typed but my typewriter packed up and I don't know whether to replace it or get an LQ/MLQ type printer for the CPC 464 - would it be a waste of time? If not which program (cassette) would help me to type letters? Or should I first buy a disc drive?
**Mrs C Jenkins**
**Newton, Wales**

*We all make mistakes (ahem ahem) and*

## Sugarman



# AMSCENE

## CPC releases, news and information

# New releases



● *The Train* – an accolade for Accolade?

**Accolade** are soon to release their first game through **Electronic Arts**, *The Train*, in which you play a French Resistance leader trying to seize an armoured train containing French treasures and guide it to safety in Normandy. The game's part shoot-em-up and part simulation, so you'll need a combination of the two skills to do well. Out now at **£8.95 on tape** and **£14.95 cassette.** Look out for a **full review** next month!

**Firebird** have been quiet of late, but they're soon to start making noises again with *Savage*, scheduled for release in November at **£8.99 on tape** and **£14.99 on disk.**

**Ocean** present *Typhoon* and *Daley Thompson's Olympic Challenge*. The former is a simulation due for release in September – but a special version of the game, an arcade machine sqeezed into a suitcase and is worth over £1,000, is also a prize on TV's *Wheel of Fortune*. On CPC it's a positive bargain at **£8.95 on tape** and **£14.95 on disk**.

*Daley Thompson's Olympic Challenge* is also due for release – coinciding nicely with the Seoul goings-on – at **£9.95 on tape** and **£14.95 on disk**. It has the ten Olympic decathlon events featured in the original *Daley Thompson's Decathlon*, but there's also a workout in the gym beforehand.

*Metaplex* has just been released by **Addictive** – who brought you *Football Manager* and *Football Manager II*. Unusually for **Addictive** it's not a strategy but an arcade shoot-em-up: **£2.99 on tape, £6.99 on disk**.

## Bits & CPC's

● *Following a request in AA35 (er, that's AA35 mark one!) for programs using speech, we've heard about one by* **Edward Reid**, *who supplies it for £1 (p&p) plus a blank disk/tape:* **157 Ladyloan Ave, Drumchaple, Glasgow G15 8RX.** *And the ever-welcome* **Joan Pancott** *can put you in touch with a blind CPC user who could help too* ☎ **0305 784155.**

● *Remember us reporting* **Power House's** *impressive boast last month of having sold 250,000 copies of games in just six months? They've just gone bust...*

● *What a huge amount of post our* **Code Masters** *giveaway produced! Gary's crawling out from under it now, and you lucky winners should receive yours soon...*

● *We take this opportunity once again to apologise for the two major boo-boo's last month.*

*Getting the issue number wrong (35 twice?) was one thing, but printing a whole page of* **Type-Ins** *twice...!*

## Oh joys

**Suncom** launch two new joysticks, the Tac 30 and Tac 50 – upgrades of the Tac 3 and Tac 5 models, with microswitches and aircraft style handles. The Tac 30 is £13.99, the Tac 50 **£14.99.**

And **Konix** of **Speedking** fame have also added two to their range, the Predator and the Megablaster. The Megablaster is to sell for 'under **£8**' and the Predator 'under **£14**'.



● The Megablaster from Konix

# Pirates ahoy

The **Federation Against Software Theft** (FAST) and members Glagow's 'E' Division CID have carried out simultaneous raids in Glasgow, Wishaw and East Kilbride during which **£100,000** of allegedly pirated software, both business and leisure, was seized.

Bob Hay of FAST claimed: 'Piracy in Scotland has been of concern for some time but with some very good information and assistance from **Electronic Arts** the Strathclyde police carried through a very thorough investigation. Results so far are most encouraging'.

**Bob Hay, FAST** ☎ **01-430 2408.**

Coming soon to a warehouse near you...



## All-ways interface

**Micro Control Systems** announce a new device which could make interfacing computer equipment much easier. **Plug-a-Buffer** is a power supply with base unit and sockets for input and output. Various modules can be plugged in – RS232, parallel (Centronics) and IEEE-488. Once configuration is sorted out, the transfer of data from one form to another is automatic.

Of course if you're pumping information at 19,200 bits per second the device on the other end can't keep up. So an internal buffer, varying in size from 8K of memory up to 512K, is fitted to the device.

Price for the basic unit with no interface modules or memory is **£75**. The top of the range 512K version would set you back **£229**. As for the communications modules, parallel is £18, the RS232 slightly more expensive at £20 and the IEEE (beloved of engineers and scientists) £58.

For more information: **Dr Richard Tavener, Micro Control Systems,** ☎ **0602 391204**. Price enquiries: **Chris Wilson, Harvard Marketing,** ☎ **01 759 0005.**

# Club spot

● Our request in *Reaction* (*AA*35) for details of user groups and regular Amstrad magazines was responded to rapidly by **The United Amstrad User Group**, which offers a bi-monthly magazine; a computer book library; a Public Domain software library; software/hardware discount agreements, and comprehensive help, advice and sup1port. Annual membership costs just £5 a year (how do they do it?).

The bi-monthly magazine, **CPC User**, is hardly the glossiest around, but for value for money and sheer friendliness it's hard to beat. One recent issue carried articles on adventuring and disk operating system compatibility, as well as reviews (*Pyraword*, DLAN), a mailbox section, book and PD library updates and a sales and wanted section (advertising free to members).

Furthermore UAUG are positively desperate for advertisers and people to contribute to, and edit parts of, their magazine. So CPC enthusiasts and budding journalists: jump to it!

UAUG are at **1 Magnolia Close, Fareham, Hants, PO14 1PX.**

● **Bridge** enthusiasts will be delighted to know that there is an unofficial **Amstrad Bridge Club**. It boasts 40 buffs of the card-playing variety united by one single interest: using the CPC to score events and ease the administrative burden.

The software has been developed by amateurs and is available free to anyone. Get in touch with **F.B. Brighton,** who seems a thoroughly decent sort (i.e. he said some v. nice things about *AA!)*, at **30 Ranmoor View, 410 Fulwood Rd, Sheffield S10 3GG % 0742 307555.** Interesting bulletin board... ☎ **0905 52536 (BBS); 0905 53248 (voice)**

● **Club 464**: Neil, 102 Evelyn Road, Dunstable, Beds, LU5 4NQ. Membership: free.

● Finally in this first *Club Spot*, it would be unfair not to mention **WACCI**. Annual subscription to their monthly wacky 'truly alternative' fanzine is **£12**. This has to be the weirdest publication that has passed the *AA* desk, and deserves your earnest attention. **Wacci, 59 The Green, Twickenham, Middlesex TW2 5BU ☎ 01 898 1090.**

***Club Spot: AA*, 4 Queen St, Bath, Avon BA1 1EJ.**

## DARK SIDE competition winners

Well done Paul Sawyer of Barry, South Glamorgan, who reckons that the worst sequel of all time is *Rambo XXIV – Let's Kill Everyone We Haven't Killed Already (Simulator)*; and Michael Gledhill of Tavistock, Devon who rates *Dark Side* itself because, 'For Realism, Everything Else Seems Chronic Against Perspective Entertainment'. The rest of you can perhaps take some consolation from the fact that this was Michael's thirteenth *AA* competition entry, and from the fact that there are some 70 or so prizes to be won this issue!

While we're on the subject of Freescape, the 3D system employed by Incentive on the phenomenally successful *Dark Side* and its predecessor *Driller* (the editor's favourite), details are beginning to emerge of the third game to employ the system. It's called *Total Eclipse*, it's set in Egypt and according to Ian Andrew we're promised 'wierd hieroglyphics, giant pyramids and a strange curse' (what, the return of *Psycho Pigs?)* under an ever-darkening sky. The finished product is unveiled – or at least demo'ed –
at the *PC Show*.

## *Day in the life* returns

One section of *AA* that always generated interest was *A Day in the Life*, and we've had many letters wondering whatever happened to it. Well, it's back – and that's where you come in!

For the benefit of new or amnesiac readers, 'A Day in the Life' was a series of articles written by readers who use their CPC in serious – or bizarre – ways. President Reagan uses one to index his one-liners (but he's real tired right now and so can't write); President Gorbachev uses it to work out his reforms, but he's kind of busy too...

But what about you? What we're after is about 400-700 of your own well chosens – and it doesn't have to follow the daily diary style. Write to ***Day in the Life*, *Amstrad Action*, 4 Queen St, Bath, Avon BA1 1EJ.**

Naturally we pay substantially for any contributions we use.

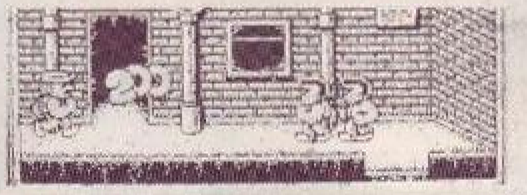
We prefer both a print-out and a disk file, but we'd stretch a point if you ask nicely.

# Budget releases

**Silverbird, Telecomsoft's** budget label, have just signed games from the back catalogues of **Mirrorsoft, Palace** and **Digital Integration**. The games, at **£1.99 on cassette**, are set to appear within the next six months. The **Mirrorsoft** games are *Biggles, Dynamite Dan, Dynamite Dan II* and *Sai Combat* while the **Palace** titles are *Cauldron, Cauldron II* and *Antiriad*. **Digital Integration's** contributions are *Fighter Pilot and Night Gunner*.

**Kixx** is a new budget label whose philosophy (it says here) is 'quality not quantity'. Their first two titles, out now, are re-releases of *Gauntlet* and *Metrocross*. Both cost **£2.99 on cassette.** Future re-releases include *Ace of Aces, World Games* and *10th Frame*. Some originals are also due, starting with *Blackbeard* in October.
/packs/

**Players** have games coming soon: *Joe Blade II, Thing* and *Powerplay*, a re-



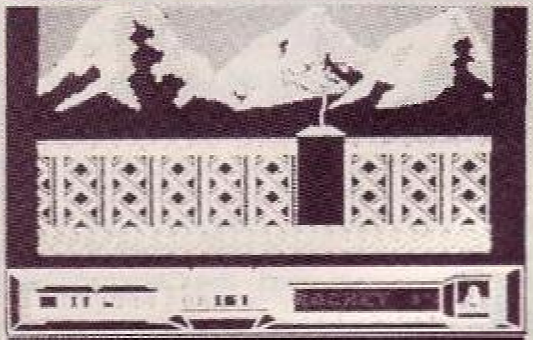
● Joe Blade is back

release of **Arcana's** trivia game. The other two are similar in style to *Joe Blade* – not surprising, since they're by the same author. All three cost **£1.99 on cassette.**



● Powerplay returns on budget

**Blue Ribbon** have signed a licensing deal with **Bubble Bus** to re-release their old titles. *Wizard's Lair, Deathsville* and *Paladin* are all **£1.99 on cassette. Zeppelin Games** have just released another game for the CPC, *2088*. It's on their blue label: **£1.99 on tape.** And finally *Battle Valley* from **Hewson** on their **Rack It** label should be out now at **£2.99 on cassette.**



● Tank combat in Battle Valley

# BAR CPM

## First Steps – part two with Richard Monteiro

**Welcome to the *AA* third birthday number (if you think 36 should have been the birthday issue, think again and then explain why the 21st century begins in 2001: besides, last issue was 35 mark two!). Three years on and we still haven't run out of steam. To celebrate we have a bumper-sized *Bar CPM* containing the second instalment of our *First Steps* series and (below) a review of Graduate's updated ROM-based CPM+ system.**

We saw last month how CPM's DIR command displays the names of files on disk. It also shows the attributes associated with files. Attributes determine whether a file is read-only or read and write. Hidden files exist which obviously don't show when DIR is issued. (CPM Plus users can enter DIRSYS to display these files. CPM 2.2 users are stuck unless they use STAT (more on this later).)

### Advanced DIR

An advanced version of the CPM Plus DIR command exists: the syntax is

`DIR [option,option...]:`

It sits on the system disk and allows files to be displayed in a number of ways. Listing options follow the command and are contained within square brackets. Options can be used individually or strung together when separated by commas or spaces. Options can be abbreviated to two or even one character if the abbreviation unambiguously identifies the option.

| Option | Function |
|---|---|
| ATT | Displays attributes. |
| DATE | Shows files with date and time stamp. |
| DIR | Exhibits files with DIR attributes. |
| DRIVE | =ALL parades files on all drives. |
| DRIVE | =(A,B) manifests files on specified drives. |
| EXCLUDE | Exposes unspecified files. |
| FULL | Renders all file information. |
| MESSAGE | Proclaims the names of specified drives. |
| NOSORT | Unfolds files in any order from disk. |
| RO | Brings to view all read-only files. |
| RW | Announces read/write files. |
| SIZE | Reveals file size in kilobytes. |
| SYS | Unveils hidden files. |
| USER | =ALL discloses all files in all user areas. |
| USER | =(0,1,2) unfurls files in given users areas. |

So if you wished to display the file size of all hidden COM files in users areas 0 to 3 in drive B:

`DIR B:[SIZE,SYS,USER=(0,1,2,3)] *.COM`

*(blimey! – ed.)*. That's an extreme example, but demonstrates DIR's flexibility and power.

### Beyond DIR

CPM doesn't end at DIR, however. There are a handful of other in-built commands that generally keep disks in check. For instance `TYPE` filename displays the contents of the specified file on screen. It is used for viewing ASCII files. CPM Plus users have the option of adding `PAGE` to the command – `TYPE filename PAGE` – which stops the listing automatically after so many lines of text. This allows you to read the text and then press any key to continue.

`TYPE` can be frustrating for 2.2 users if they are not aware of a few key sequences to pause the listing before it scrolls out of view:

**`Control-S` pauses the display.**
**`Control-Q` resumes the listing.**
**`Control-C` quits from the listing.**

The term **Control-S**, for instance, means press the Control and S keys simultaneously.

To send a file to printer, press `Control-P` before issuing the `TYPE` command. Press `Control-P` a second time to stop output to the printer. Note that `Control-P` can be used at any time – before cataloguing a disk, running an application or copying files. Its main purpose is to record what goes on during a work session. Remember everything you type in will be sent to the printer.

**Next month we discover more CPM commands and keyboard tricks.**

## CPM Plus V2 on ROM

**Graduate Software ● £32.50**
**6128 or expanded 464/664**

Placing the CPM+ operating system on rom is no small feat: adding to CPM's core commands is even more impressive. Yet Derby-dwellers Graduate managed this back in April (reviewed *AA*32). At the time we hailed its appearance as the best thing that could happen to CPM, and couldn't imagine anything bettering it. Only Graduate's strive for perfection has resulted in CPM Plus version 2 on ROM. It's here and it's hot.

So what does all this 'CPM Plus on ROM' business entail anyway? Well, for a start you need a romboard. The best – but also the most expensive (£34.95) – comes from the stables of **Rombo Productions** (☎ **0506 39046**). Not surprisingly this board is called Rombo. Doubtless you'll be able to pick up other boards for around £15 if you look. Romboards accept 8k and 16k eproms – these are 28-legged chips – which act like read-only memory. So plugging in the two roms that Graduate's modified CPM comes on gives you instantaneous access to DR's operating system. 464 and 664 users can upgrade to 6128's by following the upgrade article in *AA*30.

You know if the roms are installed correctly, because a message proclaiming your name appears – very prestigious. Several external (or bar) commands are introduced to the system:

**|CPMVER** displays text reminding you that CPM Plus is Amstrad's and Digital Research's copyright. Version number and serial number are also displayed.

**|NAME** prints your name – just in case you missed it when you switched on your CPC.

**|NOCPM** disables the CPM roms.

**|O** or **|EMS** (not Early Morning Sickness, but close: Early Morning Start) powers up CPM Plus. A string parameter may follow which enables you to boot an application or execute a CPM command automatically. For instance, **|O,"DISCKIT3"** would




start CPM and execute Disckit (assuming, of course, you have a disk in the drive containing a copy of Disckit).

|OHELP lists accessory roms. More on these elsewhere.

|OP allows you to conditionally enter CPM. Inserting a disk displays all executable COM files; selecting one of these causes CPM to start along with the chosen program.

## CPM extensions

Like BASIC, CPM has several in-built commands for cataloguing the disk, erasing files and so on (DIR, TYPE, USER etc.). Graduate have somehow managed to add to the command range and even improve existing instructions. BORDER, for example, lets you change the border colour. Similarly INK, PAPER, MODE and PEN change other screen colour characteristics.

### Additions to version 1.71

New external commands include **|NOCPM** for disabling CPM on ROM and **|OHELP** for listing accessory roms.

The CPM command set now has **SHOW** (displays information on disk drives attached to the computer), **DATE** (for viewing system date and time), DATE SET (for altering date and time), **KDS** (activates an 8-bit printer port if attached), ROMCAT (lists all accessory roms) and **SIGNON** (for initialising accessory ROMS).

Standard CPM uses spaces as delimiters between commands – for instance, `DIR *.COM`. The ROM'd version accepts commas as the delimiters: `DIR,*.COM`, `MODE,2` and so on. Like Basic, Graduate's CPM commands can be chained together. CPM requires each instruction to be separated by an exclamation mark (`MODE 2!DIR *.COM`, say), BASIC uses the colon (`MODE 2:|DIR,"*.COM"`).

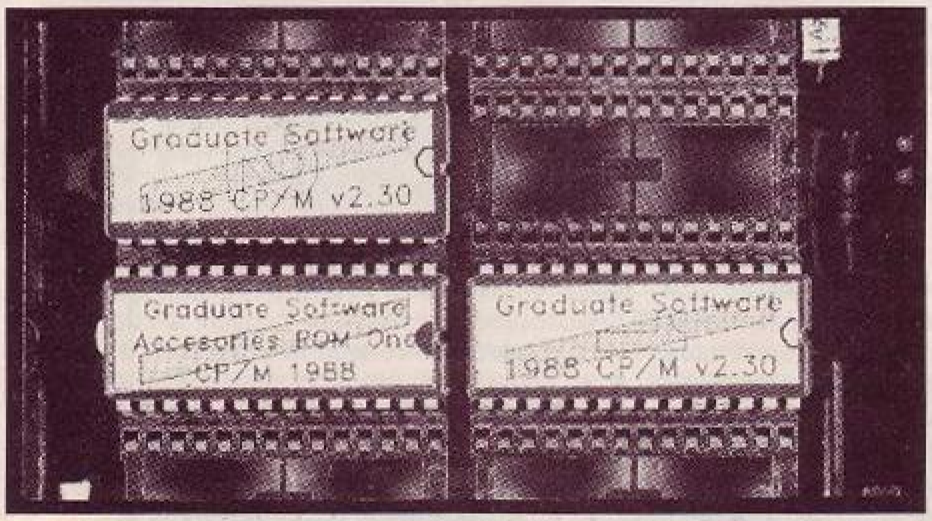
Many of the commands added to CPM are similar in name and operation to BASIC's offerings. For instance CAT catalogues the disk, BORDER changes the border colour, CLS clears the screen and MODE alters the resolution.

### Accessory ROM's

Not only can CPM be placed on ROM: so too can your favourite CPM application or utility. Result: instant CPM programs. The drawback, of course, is that extra ROM slots are occupied. It would be all too easy to fill a romboard with CPM Plus and several accessory ROM's – no bad thing considering how well everything works. The accessory ROM sent for review contained the public domain file manager NSWEEP and an unusual command for running Amsdos binary programs. When complete, the accessory ROM should hold an extra two utilities: a formatter and a PCW disk reader.

You can catalogue accessory ROM's in much the same way as a disk, and run files in a like manner. The advantage is speed: one moment you're typing the program name, the next you're staring at the application.

Graduate charge £15 to place CPM programs of your choice on ROM. Contact them on ☎ **0332 702993** for details.




● **CPM Plus initialised from ROM. But who's this Review Only chap Graduate keep referring to?**

## WIN FREE GRADUATE GOODIES!

**Are we mad? Are Graduate mad? Graduate, nice chaps that they are, have decided to give away a fabulous copy of CPM on ROM and 10 vouchers worth £5 off any of their product to *AA* readers. That means you!**

**All you have to do is scribble your name on the back of an envelope of postcard and address it to *Richard Monteiro's Bar CPM on ROM, Amstrad Action*, 4 Queen Street, Bath, BA1 1EJ. Sometime next month Steve will dip his greasy paw into Pat's even greasier competition sack and pull out the lucky winners' entries.**

Other commands actually replace transient programs found on the system disk: LANGUAGE changes the character set, PALETTE assigns colours to ink pots, SETLST sends commands to the printer. If you calculate the total amount of disk space saved by having these extra commands available from CPM, it comes to over 70K.

So what's it like in operation? Remarkable. It's so fast and friendly that you have a hard job believing you're working under the CPM operating system at all. No software we tested complained about the modified system. CPM doesn't have to be tortuous.

Go on, treat yourself.

### Legal ROM's

Send graduate your original CPM Plus system disk along with £32.50 and they give you two ROM's in exchange. So why your original disk? Simply to protect yourself and Graduate. The ROM's you receive have the serial number of your system disk, together with your name and address, included in the ROM code (these details appear when you switch the computer on).

This way you won't feel too happy about handing out copies. Similarly Graduate can claim that they aren't actually selling copies of CPM Plus on ROM: rather they are providing a service to transfer your disk-based CPM system onto ROM.

**Graduate Software ☎ 0332 702993**
**14 Forester Avenue, Weston on Trent, Derbyshire**

| GOOD NEWS | BAD NEWS |
|---|---|
| ■ CPM available immediately.<br>■ Extra instructions added to system.<br>■ Compatible with all CPM software. | ■ Price is up. |

### PD news

**Fareham-based UAUG (the United Amstrad User Group) have just announced a doubling in size of their CPC public domain library.**

**The library now contains over four megabytes of program with new product in the pipeline.**

**UAUG publishes a bi-monthly magazine containing all things CPC and provides free access to their PD library, crammed with CPM goodies, for £5 per year.**

**For further information write to UAUG, 1 Magnolia Close, Fareham, Hants, PO14 1PX or Gary Carter ☎ 0329 281324.**

**COS PD**

**Clockwork Orange Software – nice name! – (COS) of Runcorn, Cheshire, have just started up a PD library, containing both CPM and Amsdos software.**

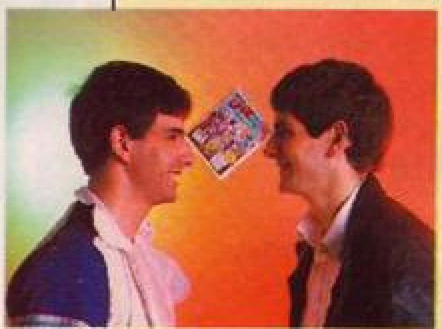
**Membership to the club is free while the copying fee is £3.60 – far cheaper than many existing PD clubs.**

**Information: Clockwork Orange Software, 11 Stanley Villas, Greenway Rd, Runcorn, Cheshire, WA7 4NW.**

# THE AA COVE



## Dizzy, AA Special Edition



Those wonderful people **Phillip** and **Andrew Oliver** *(we interviewed them last month – you surely haven't forgotten already?)* have been working round the clock to bring you a novel variation on a classic game.

For the benefit of those of you who never got acquainted with this hilarious classic, here's an introduction.

### The Hero

You play Dizzy, a charming rotund creature reminiscent of Humpty Dumpty. A guy with guts, intelligence and a strange penchant for picking up and dropping objects.

### The Villain

Your adversary is **Zax**, a really devious opponent. He's an evil sorcerer. How evil? Well, he'd conjure up rain on a Sunday afternoon to spoil the cricket.

### The Quest

Dealing with Zax won't be at all easy though. Forget all your conventional weapons – blades, firearms, bombs etc. The spell caster can't be defeated without the 'Avawiffovee' magical potion which you have to brew. (Footnote: the potion has the side effect of curing athlete's foot, although personally I reckon that's just an old wives' tale.)



It's not any old potion. Scattered throughout the screens that comprise *Dizzy's* world are various components of the ultimate weapon that enables you to complete the game. Make the potion and the quest is complete.

### How special is special?

'Special', we hear you ask: 'How special is special?' Well, rather than changing a few rooms around, altering a few puzzles and the odd sprite, the Oliver twins have spent a great deal of time and effort adding various messages and even some extra graphics.

There can be little doubt that this edition, **unique** to *AA*, offers even more incentive for you to complete what was already a hugely enjoyable game. Hope you enjoy it as much as we do *(haven't laughed so much since Pat tried to mend our 464)*.



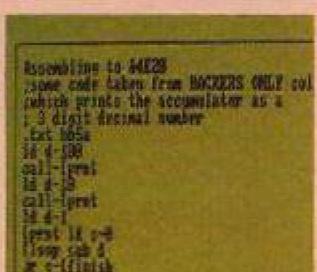
**Control Keys**

| Keys | Joystick | Action |
|---|---|---|
| SPACE | Fire | Start game |
| Z | Left | Left |
| X | Right | Right |
| SPACE | Up | Jump |
| ENTER | Fire | Pick up/ Drop/Use |

## Micro Assembler

Desmond Daly, Glounthane, Co. Cork, Eire

Programmed in Basic, 'Micro' lets you enter assembly listings into the computer. These listings are directly replaceable for **machine code**, the language the Z80 chip in the Amstrad understands.



If you've been following *First Bytes*, our machine code course, you may appreciate just how frustrating assembling code by hand can be.

This program takes some of the sting out of using the language – although that's not to say that learning machine code becomes much easier!

***For more on the use of the assembler see* First Bytes *in this issue.***

## Special Disk Formatter

Tan Kwong Peng, Singapore

Ever had a disk with a bad sector or two on it? It's a real pain, because even if you've backed up the contents you still can't use the bad disk .

Until now, that is. This program is not only a formatter for data disks – it can **recover corrupted disks!**

The program loads in two halves, Basic and machine code. You are then prompted for the drive to be formatted, and the program waits politely until you are ready.

The program then starts work using the data format. Just suppose it finds a bad sector: it then assigns that sector to a dummy file called CORRUPTED, so that the rest of the disk ignores the sector. Make sure that you don't accidentally erase this file!

If the program can't cope with the damaged disk it recommends **vendor format**, because bad sectors sometimes occur in the directory area, and such sectors can't be assigned to a dummy file. But this should be rare.

# R CASSETTE

## Smart II

**Robert Buckley, London**

This art package appeared in *Type-Ins* in *AA29*, and all this time later we're still getting letters asking for more of the same. So **Smart** has now been upgraded. And we think you'll agree that for a program written mostly in Basic, it's pretty impressive.

For one thing, virtually all controls are carried out with a joystick (it's a joystick only program). For another, it works with all CPC's, on disk and tape. It uses pull down menus to select features, and these cover the art area, which is put back as it was before the menus appear.

Joystick movement is 'intelligent': the pointer starts moving slowly, but accelerates the longer you keep going in a given direction. So control is fast and accurate.

**Smart II** is fairly conventional. First come the **line drawing commands**, which produce outlines on the screen. These are **draw** (allows freehand drawing and single pixel selection), **line, box, circle** (can handle ellipses), **shape** (draw any polygon) and **spray can**.

Selecting which of the 16 inks to use is very simple. Using the palette option, the inks can all be selected at the touch of a button. Changing the actual pen colour is accomplished in a similar manner. And there's two line thicknesses.

**Mistakes can be reset** to the paper colour – in effect, erased. This is a bit too hefty for fine alterations, so a zoom function is available under **edit**.

**Block operations** are here – **reflection in the x and y axes**, and **copy**. The size of the area to be copied is under your control: but remember, the larger the area the longer it takes.

**Loading** and **saving** are available, and the computer can **wipe** the screen clear if you've really messed up.

You've seen Pat's not-very-impressive attempt *(right)*: now it's your turn! We want *your own work*, using *Smart II*, on disk or tape. Send it today to: *The Look, AA*, 4 Queen St, Bath, Avon BA1 1EJ. (Plaster everything with your name and address: we can't be responsible for anything not so marked.)

## Tape to disk? No worries!

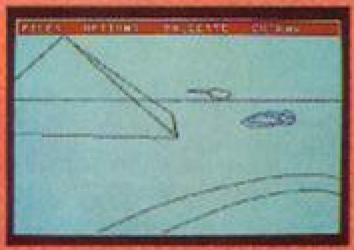
**Dizzy – *The Special Edition* is a cinch to put on disk. Simply press the s key just before the game finishes loading, and it automatically saves a copy onto disk! Around 61K should be enough.**

**To help you to get the utilities onto disk, we (well, Gary really) has put a program onto the end of the tape. All you have to do is type `RUN"ONDISK.BIN` (press play on the tape until it has loaded, and then rewind and replay the tape). The program now automatically loads all the utilities and help files, and saves them onto disk. On this side about 38K of disk space should suffice.**

## It's free – but is it any good?

**Surely this here art designer can't be much good? You'd be surprised – Pat McDonald finds a suitable case for treatment**

Let's **get down** and **draw** something. (You may think this is a **waste of time**, but what if we tell you that you could win **£20** and get it into *The Look*'s art gallery?)



● So far, not much

● Begin by drawing the **outline**. What you're looking for is the boundaries between sharply contrasting areas of colour. The raw drawing commands are very good at this, with the **circle** command especially useful for ellipses and partial curves. As this is a desert landscape, let's put a pyramid in. Other features are a lake, road and a helicopter. (The helicopter is an excuse for the perspective, which places the viewer hundreds of feet in the air.)

● This next bit, **cleaning up**, is fiddly. You have to take all the superfluous edges and lines on the screen and get rid of them. Either use the erase function (fast but clumsy) or edit (slow but sure).



● Filled, but still crude

Once you finish this – and it's worthwhile spending time getting it just right – you can block-fill the major areas of colour. Filling the pyramid shadow, the sun and the dark sand takes time, and it's a good idea to make periodic saves, just in case the **fill** command goes manic.

● Now we reach **the fun bit**, where we embellish the partially completed screen. The **spray can** comes into its own at this stage, and the free hand drawing/dot function and zoom function help considerably.

The helicopter and lake are good examples of small detail. Both were drawn roughly, then finished with the zoom/edit option. Notice the black dot near the sun? That was a mistake I decided to leave in – it gives the impression of a high flying bird. *(Oh so that's what it is – ed.)*



● A big improvement

● So now you have a finished picture. Or do you? This stage can be the most frustrating, because as a rule a picture is most vulnerable just prior to completion. Lots of saves and loads are a good idea. The tricky parts are deciding on the location of highlights and shadows (especially on rounded or irregular shapes) and similar tiny details – I find it's difficult getting the grip right on a hand.

Getting the job done was a bit of a pig, because of the shadow on the pyramid which bisected the road, and meant the road was two different colours. Time to reach for the spray can and freehand options again.



● Finished! I'll start the bidding at £50,000... Do I hear £60,000? *(no – ed.)*

# AA is three: help us celebrate!

## – dozens of prizes to be won!




**CAN** it really be three whole years since *AA* began? Hard to believe, we know, but it's true – we checked. So we thought we'd invite you – without whom, after all, none of this would have been possible – to help us celebrate.

**OUR** first prize is a heap of hardware that would make your computing life infinitely more exciting:

- A **KDS second disk drive** (worth **£150**) that runs 5.25 inch – i.e. *cheap* – disks;
- A **'Designer' modem package** from **Modem Marketing** that includes a CPC interface **and** *Axis* software (you may recall us raving about it in *AA*33) – worth in total about **£175;**
- A **full year's subscription to Micronet** worth **£80** (reviewed in *AA*35);
- And last but not least a **full year's subscription to Microlink** worth **£75.**

**ALL** in all you couldn't buy this little lot for anything under **450 big ones.** And pretty soon one of you lucky people is going to be waking up to one very overloaded postman!




**BUT** that's not all! We have some rather useful **consolation prizes** too. **KDS** (yes, them again) have also put at our disposal:

- A **CPC serial interface** (retail value £50);
- A **Romboard** (£25);
- And an 8-bit printer port (£20).
- **EVEN Future Publishing** have pushed the boat out a bit, offering not one, not ten, not even 20 but **36** – as in 36 issues completed – of the exclusive and as yet otherwise unobtainable *Amstrad Action* teeshirts. We can't for obvious reasons promise such a garment will look as good as you as it does on the delectable **Sharon,** but with so many teeshirts on offer your chances of winning have to be pretty good, don't they?

**ALL** you have to do to win a second disk drive *and* the modem-plus-trimmings *or* one of our dozens of consolation prizes is to answer our **Not Completely Serious Quiz.** It can't be too difficult, because even the editor managed to answer some of the questions! *(I did? – ed.)*



**SO** get cracking why don't you? Put your answers on a postcard or the back of an envelope (NO LETTERS OPENED!) more or less as we've done – but don't put your name as **Leopold Bloom** (unless it happens to *be* **Leopold Bloom**). Indicate whether you'd like a medium or an extra large teeshirt (if in doubt we recommend the extra large).

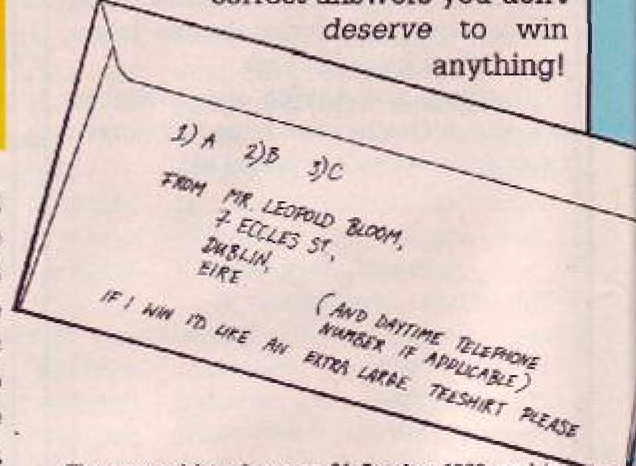



1. **WHICH** of the following is a word processor:
   a. *Space Invaders*
   b. *Protext*
   c. *Advanced Art Studio?*

2. **WHAT** was *Mastergame* in *AA34?*
   a. *Psycho Pigs UXB*
   b. *Outrun*
   c. *Dark Side?*

3. **DUE** to editorial incompetence, which *AA* never 'appeared'?
   a. *AA1*
   b. *AA999*
   c. *AA36?*

**BUT** if you think we'd be daft enough to supply you with the correct answers you don't *deserve* to win anything!




**The competition closes on 31 October 1988, and is not open to employees or relatives of Future (sorry mum).**

# ABSOLUTE BEGINNERS

## Get to grips with Basic the easy way

Many commands in Basic are controlled by operands – numbers that come after the commands themselves, describing precisely how your CPC performs the tasks it's told to do.

Let's look a little closer at operands. We know already that we can use variables as operands. That's because variables, as we've seen, are words that stand in for numbers. The line

```
a=80:b=120:PLOT a,b
```

means the same as **PLOT 80,120** because **a** stands in for the number 80 and **b** stands in for the number 120.

Remember how we used **PRINT** to display the values of variables? Type in this program:

```
10 a=50
20 PRINT a
30 PRINT a+10
40 b=40:PRINT a+b
```

Now **RUN** it and you get a list of numbers running down the screen. The first of these comes from PRINT a in line 20. The number is 50, because that's the value of a. The second number, 60, comes from **PRINT a+10** in line 30. Since **a** has a value of 50, **a+10**, naturally enough, has the value of 60 and that's what the **PRINT** command displays.

The other two numbers speak for themselves. Satisfy yourself that you understand why those values are printed, then type this next program in – not forgetting to **NEW** the previous one first.

```
10 a=95:b=140
20 MOVE a,b,1
30 DRAW a,b+80,1
40 DRAW a+50,b+80,1
50 DRAW a+50,b,1
60 DRAW a,b,1
```

When you **RUN** it what happens? That's right, a rectangle. The variables **a** and **b** determine where the rectangle goes on the screen, so you can put it somewhere else just by substituting a new line. Try it now – just type

```
10 a=470:b=10
```

or something like it. The rectangle is still the same shape, but it's drawn somewhere else altogether.

We've seen variables do this sort of thing before, allowing us to change the effect of a program in some way without having to alter every line of it. Notice how all the **MOVE** and **DRAW** coordinates depend on the values of a and b. It's fine to use things like **a+50** as the operand of a command: your CPC simply looks up the value of **a**, adds 50 to it, and uses the answer as an operand in the normal way.

## More on variables

The whole point of a variable is that you can vary it – change its value, in other words. To do this you use an *assignment*, like **a=40** or **d=571**. So far this is the only kind of assignment we've seen: *variable name=number.*

But there's more to them than that. Instead of a number after the = you can use a variable or expression. Try this:

```
10 a=90
20 b=a
30 PRINT b
40 c=b+20
50 PRINT c
```

The assignment in line 10 sets the value of **a** to 90. The assignment in line 20 makes the value of **b** the same as that of **a** – 90, in other words – so that's the value that gets printed out by line 30. Line 40 works in a similar way, making **c** equal to the value of **b** plus 20. You can see it's worked by the value printed in line 50.

That's all very well, but the next section takes assignments a whole lot further. Type and **RUN** this:

```
10 a=55
20 PRINT a
30 a=a+10
40 PRINT a
50 a=a+10
60 PRINT a
```

The assignments in lines 30 and 50 are a little different from what we've seen before. The new value that each of these assignments gives a depends on the value of a up to that point. As you can see from the numbers printed out by the program, **a** has a different value at each of lines 20, 40 and 60. Even though the assignments in lines 30 and 50 are identical, they don't give a the same value.

Each of the **a=a+10** assignments increases **a** by 10. This is not a proper equation in ordinary maths, but Basic takes **a=a+10** to mean *take the current value of a, add 10 to it and make that the new value of a.* This idea of using the old value of a variable to make its new value can come in very handy indeed.

## Loops again

Lets look at a program using this idea. Type and **RUN**:

```
10 a=1
20 FOR b=1 to 20
30 a=a*2
40 PRINT a
50 NEXT b
```

The numbers it prints are powers of 2. Line 30 doubles the value of a each time, and line 40 puts the new value on screen. We don't actually use the loop variable b in this process. It's just there to make sure the CPC runs through the **FOR-NEXT** loop the right number of times.

***Next month we go even loopier, and then consider the* PRINT *command.***

## Not very much maths at all, honest

When you have something like **a+50** or **a+b-10** we call it an *arithmetical expression*, or just *expression* for short. You've already met expressions in the square-digging program in last month's *Absolute Beginners*.

If you always thought computer programming was all about maths, don't worry. It isn't. A little simple arithmetic can come in handy, but it's hardly terrifying. We've already just seen adding and subtracting in the expressions just given, and they're nothing to be too frightened of, are they?

Multiplying and dividing are almost as simple, apart from one slight snag: where's the keys? Well, instead of **x** for multiply you use * and instead of ÷ you use / (same key as the question mark). Type this one in and **RUN** it:

```
10 a=20:b=4:c=5
20 PRINT "Multiplication"
30 PRINT a*b
40 PRINT a*c
50 PRINT"Division"
60 PRINT a/b
70 PRINT a/c
```

Notice how your CPC does all the work: it has a kind of built-in calculator (we should be so lucky!) that does your number-crunching for you, so all you've got to do

# PROBLEM ATTIC

**Can Pat McDonald save the world again? Nope.**

## Disk drives

In *AA30* you published a very interesting step-by-step conversion of a 464 to a 6128. The only problem is the cost of the DDI-1 disk drive, £159.95. Is it possible to make a DDI-1 oneself? I've seen an article showing how to make a second disk drive. Obviously there is some difference, though, with interfacing the disk drive to a 464. Is there any way for an individual to make a DDI-1?

**D Harper, Gloucester**

*It is certainly necessary to have an interface to plug a disk drive into a 464. Such an interface is included in the price of a DDI-1. As for making a replica, well that is possible. You would also have to buy the disk ROM, code AM40015, from CPC though.*

*Come to think of it, if any hardware people out there have projects for DDI-1 interfaces and memory upgrades, send them in to* Soldering On. *Who knows, the 464 only syndrome may fade away, with programs developed solely for disk/128K memories.*

## Bugged until hacked

I have recently bought US Gold's *Killed Until Dead*. After loading the *Hacker* program, I tried running it and got the usual message and a READY message. I tried listing the program, and got

`28532 le your school ties`

Why?

**Benjamin Fall, Fareham**

*The code in the program probably contains this message. When the operating system regains control, this code is then interpreted as the above Basic snippet.*

## Dim view

I own a 464 with a colour monitor. Until the monitor gets warmed up – which takes about two hours – everything is dark. Even then you still can't see all the detail. Are all colour monitors like this, or is something wrong with mine?

**M Lindley, Dewsbury**

*Our screenshots are taken on a CTM640. So your monitor is definitely below standard. I hope your machine is still under guarantee: otherwise you'll be paying for a repair job.*

## Quest for the answer

I noticed this question in *Problem Attic* (*AA34*) from Daniel Williams from Orpington: 'Can the 40025 ROM chip operate on a ROM board?' Well, I have a 6128 and I'm interested in using the 464 ROM (40009) in a similar way on a ROM board (I have a Rombo).

I understand that you can't have two ROM zeroes at the same time, so if I plugged in the 464 ROM into ROM socket zero on the ROM board and attached a switch to the internal 6128 ROM, could I then choose 464 mode by switching off the 6128 ROM with the switch and turning on the 464 ROM with the dipswitch on the ROM board? Would the 464 ROM initialise?

If that lot sounds OK then:–

1) Which leg do I connect the switch to on the internal 6128 ROM?

2) How much would a 464 ROM cost me?

3) Where do I get it from?

I also have *Rodos* on ROM but no five-and-a-quarter inch disk drive so:–

1) Could you recommend a five-and-a-quarter inch disk drive that offers full capacity under the excellent *Rodos* operating system? (One that I don't have to do anything to, apart from plugging it in.)

2) Could *Rodos* handle a dual, double sided and double density five-and-a-quarter inch disk drive Cumana drive? I have seen one in a department store for £89, but it has a BBC connector.

**N Andrew, Newbury**

*The problem with using a ROM board is that the 40025 is a 32K chip, split into lower and upper halves. This is non-standard, and so you cannot plug the 40025 into a ROM board to start with, or any other operating system ROM.*

*That said, you can have both the 6128 and 464 (or 664) ROM's available at the flick of a switch. A full project for this has been sent to* Soldering on, *and should appear before too long. So the long and short of it is:– Pin 28 is used on both devices to enable/disable the chips. A little extra circuitry is required though to ensure that both ROM's cannot be switched on at the same time, which could result in permanent damage.*

*Also, it would be necessary to reset the entire machine to initialize the ROM. However, the main advantage of such a system is total software compatibility.*

*The CPC 464 ROM costs £35.92 from CPC Ltd,* ☎ *0772 555034, 194-200 North Rd, Preston PR1 1 YP.*

*Your other points are, I think, best answered by Romantic Robot themselves, who make the Multiface. Contact them on* ☎ 01 200 8870.

## Return or bust

In *AA35* there was a program called *Dart Scoreboard*. When I'd typed in the 1,530 lined program all I got was the prompt `Ready`.

**Kevin Pool, Wembley**

*I regret that the last program line was missed off the listing. It was:*

`1540 RETURN`

## Graphics help

When I type in the *Printer Dump* routine from *AA35* I get the message `Syntax Error in 90`. I have typed in the line correctly, so what is wrong? I have a 6128.

**M J Foster, Heywood**

*For an explanation see* The Look, *our graphics series beginning this month.*

## Non comprendez

After reading the CPC-CPC link article in *AA30* I was confused. Why are connections made to the common pins *and* ground? What is it that changes the potential of some part of the set-up to neccessitate the use of diodes? Is the cause controllable by software?

**C Dunn, Doncaster**

*The diode/ground combination is used simply to ensure that the right information goes to the right joystick port. Certain pin signals are used on both joysticks, and so the diodes stop the signals 'jumping' to the other joystick.*

*The cause is controllable by software, in the sense that signals are sent to one or other half of the parallel connection.*

## Stuck?

**Write to *Problem Attic, Amstrad Action,* 4 Queen St, Bath, BA1 1EJ.**

# FIRST BYTES

**Microassembler *assistance with Richard Monteiro***

This month's *First Bytes* is devoted to explaining how *Micro Assembler (MA)* works. Many thanks to Des Daly for all his hard work in writing it.

It's written in Basic which means bits can be added – indeed, that's the idea. But not without your help. If you have any hints on improving Des's program, don't keep them secret: send them in!

## Get going!

Insert the cassette, side two face up, into the cassette deck and type `RUN "ASMBPROG.BAS"` followed by <return>. Once the program is loaded you are presented with a menu:

```
(1) Assemble source code
(2) Disassemble code
```

Here is a quick guide round the system. Press 1 and hit Return. A prompt of the form 'Location where the source code is to be assembled to' appears. Enter `&8000` <return>. The demonstration assembler program held in memory now starts to assemble. Eventually `end` is displayed. At this instance press a key and you are taken back to the main menu.

To check that the program actually has assembled press **2** <return> and answer `&8000` <return> to the 'Address to start address for disassembly' question. Machine code numbers and their assembler equivalents appear. Press a key when you've had enough.

Now check to see if the program works. Press <esc> twice so you get Basic's `Ready` prompt. Type `CALL &8000` <return>. Three zeros appear. Not exactly mind blowing material, admittedly, but it proves the system works.

## Entering source code

If you load *MA* and type `LIST` <return>, you see that the first few line numbers look something like

```
10 'ld d-100, 20 'call-[prnt, 30
'ld d-10
```

and so on. Any line that has an abbreviated REM statement (') as its first character is taken to be a line of assembly source. Des's program starts at line 2000 and continues through to 3780.

Source code is entered using normal Basic statements:

- line number
- space
- REM statement

```
10 'ld a-78
```

- address or data
- delimiter
- opcode

Note there is no space between the REM statement and the first character of the first command. Spaces cause errors – take care. Ensure that all assembly instructions are entered in lower case: failure to do so results in errors.

Most assemblers use commas to differentiate between opcode and numeric data or address – LD A,27, for instance. Not *MA*, unfortunately. Instead it uses the dash or minus sign (–). Hence a typical line of MD source would look much like `10 'a-27`. This is obviously confusing to the novice so we shall supply an *MA* patch routine next month.

Numbers, which can signify either data or a memory address, can be entered as either decimal or hexadecimal. Hex numbers simply start with an `&` symbol - identical to Locomotive Basic's way of doing things. Last issue we discussed methods of placing values in, and retrieving vlues from, memory. For instance, `LD A, (2341)` and `LD (2341),A`. The same is achieved in *MA* as follows: `10 'ld a (-2341)` and `10 'ld (-2341) a`.

## Summary

- Source code entered into Basic lines.
- Each line must start with an apostrophe.
- No spaces allowed between the apostrophe and the first assembler mnemonic.
- Opcode and address must be split by a dash – and not a comma.
- Symbolic constants start with a full stop. A dash and left square bracket used to refer to these constants.
- Reminders can be placed in the source by using a semi colon.
- Most assembler opcodes present. Logical instructions, index registers, bit operations, the stack pointer, block move commands, IN/OUT instructions aren't present and neither are interrupt commands.

*What comes next hasn't been covered in Bytes yet, and won't be for some time, so don't worry if it seems double dutch. This is here for more advanced users wishing to know all MA's features.*

*Symbolic constants and labels are possible with* MA:

- space
- full stop

```
10 '.txt BB5A
```

- no & sign
- address

- dash symbol

```
20 'call -[txt
```

- square bracket

Another example might be:

```
10 '.adr BF00
20 'ld a (-[adr)
```

A similar technique is employed for using labels:

```
10 '[loop dec b
20 'ld a-8
30 'cp b
40 'jr nz -[loop
50 'ret
60 'end
```

## Reminders too

Remarks can be placed in the source code –and work in much the same way as Basic's REM instructions - by using the semi-colon (;) after the apostrophe ('):

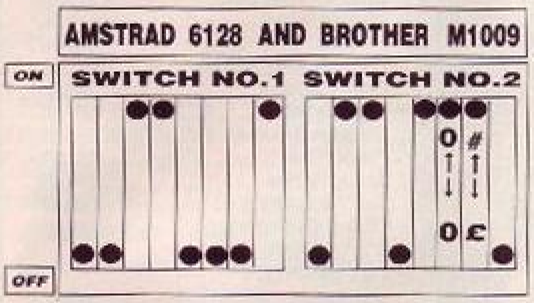
```
10 ';this loads HL with 10
20 'ld hl-10
```

Reminders cannot be placed on the same line as mnemonics.

Most Z80 instructions are supported, but there are particular batches of important instructions that have been mysteriously left out. For instance, all logical instructions – `XOR`, `OR`, `AND` – are missing. So too are all index register operations (`IX` and `IY`), bit manipulators (`BIT` and `RES`), block instructions (`LDIR`, `LDDR`, `LDD` etc), port addressing (`IN` and `OUT`) and interrupt handling. You will be OK without these for the time being. *First Bytes* will be adding the rest of the commands in the form of short Basic routines.

# WORDS WORK

## WP hints, tips and problem solving with Pat McD.




## Look – no scissors!

■ Enclosed is an illustration for P. G. Edwards of Rosyth, who has a Brother M1009 printer. The dip switches work fine, though they disagree with the manual. I've never had any problems with page feeds or skipping the perforations, and I've used my M1009 for six years.
**Paul Templar, Telford**

■ The skip perforation may be turned on by inserting a printer command call wherever a new page is required. The command is 27 78 n, where n equals the number of lines to be skipped. 27 67 m can be used to set the page length in lines (the value of m).
**J G Robertson, Sheffield**

■ I think the difficulty lies not so much in the individual make of printer, but with a general problem all printers suffer from. Printers sold in this country are set to a default paper length corresponding to American standard stationary shorter than our A4. The solution can be acheived by altering two settings from within, for example, *Tasword.*

From the main page menu, select **Customize Program** and choose the page layout line. The first option refers to the number of lines per page. I find that 65 lines, single spaced and without page numbering will fill a page of A4. Enter 65 at this first line, then simply press **RETURN** to skip each line after that.

Secondly, go to the **Printer Control Characters** line. Here use one of the blank control letters, say P. Press P and enter the codes, each followed by **RETURN**: 27 67 70. This inserts them into the table. (The 70 means 70 character lines, the length of a sheet of A4.)

It's necessary to save *Tasword* to preserve the changes. Having done that, put a single sheet of paper in the printer and switch on.

With the editor screen blank, write your new printer character in the normal way (**CTRL-spacebar**) at the top left, go to to the print routine and, having set for continuous paper, press **COPY** to print. The sheet goes through the printer unmarked. Remove it, line up your continuous paper and load your files for printing.

Don't switch off the printer or you'll have to re-submit the control code.

This may all seem a bit of a chore, but most of it only has to be done once. When the routine has been run the printer regards A4 as the standard length.

I want some advice now on my own problem. I am happy enough with *Tasword 6128*, but I am beginning to bump into its limitations, particularly with regard to speed. The longer the file, the slower it gets. I was working on a story of 8,500 words. It takes about a minute to go from one end of the text to the other. This is irritating when it comes to the revision and editing stage, when there is a lot of to-ing and fro-ing.

Clearly, the answer is to go for *Protext* on ROM. My problem is where to put it. I only have a small desk, and this is filled with the keyboard, monitor, printer and second drive.

I was wondering if I could raise the monitor on a suitable support and put the ROM box underneath. Does anyone make anything like this? And will I be exposing the ROM's to any electromagnetic nasties by putting them directly under the monitor? I would hate to wipe out expensive equipment just by switching on!
**Stuart Falconer, Newcastle**

*To all those who wrote in to help: THANKS, YOU CAN STOP NOW. On the last points, a carpenter could knock up a suitable support in minutes. ROM's are erased by ultra-violet light, so putting a monitor on top should actually help to preserve them. If you're still worried, talk to your local electrical repair supplier about earthing the ROM box – this shouldn't be necessary, but would help if the device had an insufficient earth.*

## More questions than answers

■ I, a computer illiterate, am trying to use *Protext* and *Mini Office II.* I was very interested to read the article in *AA*32 concerning the transfer of files created on *Protext* to *Office* or vice versa using Ascii format. I thought the instructions were straightforward enough. Alas no matter whether I created a file in program mode in *Protext* or a standard Ascii file in *Office* I could not get them to load into the other, always getting the error message **File not found**.

What am I doing wrong? Does the blank disk need to be formatted in another format other than data?
**David J Board, Tavistock**

■ At the moment I have a file of approximately 200 names and addresses held on the database in *Mini Office II.* I am considering buying *Protext Filer*, as I already use *Protext* in preference to the word-processor on *Office*. Unfortunately I have been unable to load my present file into *Protext*. Can it be done?
**J D Ryan, Ilkley**

*We've had a fair few enquiries about this transfer business. So here's the unexpurgated memoirs of an ex-owner of Mini Office II.*

*The main problem is that* Office *insists on putting its own extensions on files. So wordprocessors have* **.TXT** *after the file name, database files have* **.DBS**, *and so on.*

*The correct procedure from Protext to Office is to load in the file, put it into program mode, and then save it with the relevant extension. You do not need a specially formatted or blank disk – merely one with enough free space.*

*Loading wordprocessor/database files into Protext is slightly more complicated. The problem is that, although these files do contain Ascii characters, they also contain control codes for setting up the file. These can be mistaken for an end-of-file message. This ends file loading prematurely. So it may be necessary to break down a file's length into small chunks.*

*Again, as AA32 stated, do remember to set the* Office *word processor to Ascii. This is achieved through the load/save menus.*

*Another point to bear in mind is that* Protext *does like taking its time when loading a file, often more than a minute for 12K efforts. And it seems to process them to halve their length, although all the data is (usually) there.*

# AA the first three years

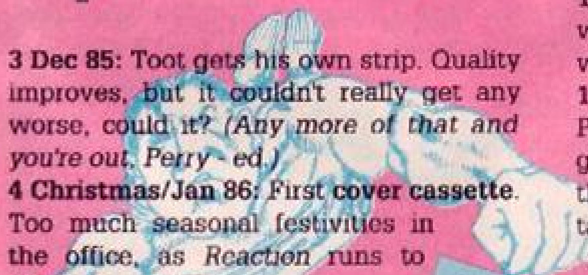
**A lightning tour of the many highs – and the occasional low – of three years of *AA*. Rather than say nice things about ourselves, however (such bad taste, don't you think?), we invited a reader, Andrew Perry – occasional contributor to *The Pilgrim* – to say nice things about us instead.**




**1 Oct 85:** Excellent mega big first issue: The Mould-Breaking magazine from **Future Publishing: 'Power-packed reviews each month on the amazing CPC 464 and 664'.** Other magazines pale into insignificance set against 130 reviews, and all for a miserly pound. Wow!

**2 Nov 85:** The ed, **Pete Connor,** tries to make out that the now infamous **'WROD-PROCESSOR'** mistake was deliberate.

## Which wrod-processor? .



**3 Dec 85:** Toot gets his own strip. Quality improves, but it couldn't really get any worse, could it? *(Any more of that and you're out, Perry - ed.)*

**4 Christmas/Jan 86:** First **cover cassette.** Too much seasonal festivities in the office, as *Reaction* runs to eight pages!




**5 Feb 86:** Best cover yet. *Sugarman's* debut.

**6 Mar 86:** More colour than ever before – a result of the office move to the 'glamorous' setting of **The Old Barn?** There's a new arrival: **Andy Wilton,** Technical Editor.

**7 Apr 86: Educational software** special, and thanks to the *Elite* mega tips I finally manage to dock at a space station.

**8 May 86:** Another cover cassette. The editor, **Pete Connor,** leaves. The end of life as we know it?



**9 Jun 86:** Though he left last issue, **Pete Connor** appears to do more in this issue than ever before. The style shifts a little towards a more 'mature' image.

**10 Jul 86: Matt Nicholson,** new ed, arrives. Best laid out issue so far, and first, and as yet only time, an adventure game – *Heavy on the Magick* – is *Mastergame.*

**11 Aug 86:** Final *Hi-Scores* – almost everyone was making up the scores, and trying to find out how naive the *AA* staff really were. Layout continues to improve.

**12 Sep 86: French** special: **first birthday.**



**13 Oct 86:** Lovable white arty covers replaced by trendy photographs. **Bob Wade's** promoted from Software Editor to Deputy Editor – is it because he was shown you could use the keyboard as well as a joystick? A Production Editor, **Jim Nagel,** arrives.

**14 Nov 86:** Editor **Matt Nicholson** leaves, and in comes **Jim Nagel** – talk about rapid promotion! Start of *A Day in the Life,* beginning with a look behind the scene at *AA* GHQ, **The Old Barn** itself.

**15 Dec 86:** New regular feature called *Hot Tips.* Depature of **Andy Wilton** and arrival of Tech Ed **Richard Monteiro.**

**16 Christmas/Jan 87: Cover cassette** which for a change doesn't ruin the cover when you take it off.

**17 Feb 87: Jim Nagel** returns to Production Editor. In his place comes games player supreme, **Bob Wade.** All this work editing and play-testing games takes its toll and *Starglider* is made the month's *Mastergame* (yuk!).

**18 Mar 87:** Drastic cut in the number of cartoons, new rating system in *Action Test* and restyled *Pilgrim,* whose cowl was beginning to look a little ragged. Round up of all available **word-processors** (or **wrod processors**), the most informative piece so far.




**20 May 87:** Worst cover ever – sacrilegious mistreatment of a CPC.

**21 Jun 87:** Price rises to £1.25. *AA* moves offices to **Bath.** Best cover ever.




**23 Aug 87:** New regular column called *Words Work. Small Ads* begin. Results of latest *AA* **questionnaire.**

**24 Sep 87: 2nd birthday. Toot** returns with a vengeance to celebrate. Much staff upheaval. Out goes Art ed, **Trevor Gilham,** and in comes **Ollie Alderton. Jim Nagel** leaves as well. (Do they know something we don't?)





**25 Oct 87:** New staff writer, **Gary Barrett.**

**26 Nov 87:** *Midi music* special. For the first time no *AA Raves.*

**28 Christmas/Jan 88:** Now traditional seasonal **cover cassette,** and equally traditional seasonal torn cover. First edition of the Pilg's *Rod and Staff Monthly,* free to all followers of the straight and narrow path (who buy *AA).*

**29 Feb 88:** Cover blurb becomes the familiar **'BRITAIN'S LEADING MAGAZINE FOR THE AMSTRAD CPC 464, 664 AND 6128'.** Rundown of the available **spreadsheets.**

**30 Mar 88: RpM** responsible for premature deaths of hundreds of 464's as owners, screwdrivers in hand, try to turn them into **6128's.**

**31 Apr 88:** *Bar CPM* starts. Great article on *CPC: The Facts.* **The Pilgrim** joins in with a look at the future of CPC **adventuring** world.

**32 May 88:** First *Perry's Piece* in *The Pilgrim.* Circulation soars as someone in Worcester buys several thousand copies. (Also available for panto.)



**33 Jun 88:** New Tech Ed **Pat MacDonald** seems to write entire mag. *Soldering On* and *Comming Online* begin. **Wargaming** special; *Buyers Guide* for graphic and musical utilities.

**34 Jul 88:** Shock horror probe scandal: **Bob Wade,** only original member of the team, edits his final issue with tears in his eyes and bulge in his wallet.



**35 Aug 88:** Arrival of **Steve Carey** (who features on the front cover, before he got a haircut).

**35 Sep 88: Issue Number Confusion Special.**

**37 Oct 88:** 3rd birthday, and a fascinating article about the first three years of *AA.*

Happy third birthday *AA,* from a loyal and satisfied reader! Where's the cheque? *(What cheque? -ed.)*

# BREAK IN

**Gary Barrett boldly goes where no program has gone before – inside Romantic Robot's Multiface Two**

## THE INSIDER

**Romantic Robot ● £14.95 (& £1 p&p)**
**Disk only**

Long ago in the early days of the CPC there was born a small black box that lived in the expansion slot at the back of the computer and had two buttons on top of it. With this mysterious box, known as the **Multiface Two**, you could transfer games from cassette to disk, display and edit memory, and do the same with the Z80 registers. Now you can delve deeper into the CPC with the aid of the *Insider*.

## Getting inside

The *Insider* comes on a single disk and must first be installed into the **Multiface**. It couldn't be easier: just type RUN"DISC" and away you go. A message tells you that the *Insider* is OK.

The first step is to press the infamous red button and watch the screen. Rather than the usual menu bar across the bottom you're instructed to insert the *Insider* disk. When you put the *Insider* disk in you're presented with a menu: lower Rom on/off, upper Rom on/off, printer on/off, linefeed on/off, Ram bank select, return, disassembler, Z80, find, text, number, poke, hex and dec. All options are accessed by a single keypress. Hex fairly obviously changes all input and output to hexadecimal and dec returns it to decimal. The return option exits from the *Insider* and you go back to whatever program you'd interupted with the **Multiface**.

The lower Rom on/off options toggles between the CPC's operating system Rom and the Ram bank which goes from &0000 to &3FFF. Ploughing through the Rom can provide you with insight into the way the CPC works. More often than not though you'll want the lower Rom off so you look around the memory. Upper Rom on/off works like the lower Rom on/off option only this time the swap is between the Basic Rom and Ram from &C000 to &FFFF. If you have more than 64K of memory you can switch banks using the *Insider's* Ram bank number option. The bank appears from locations &4000 to &7FFF. The contents of all of the CPC's registers can be diplayed with the Z80 option. Both the normal and alternate register sets are shown.

A find option enables you to search for a string of either Ascii characters or numbers in Rom or Ram. An Ascii search is useful if you want to find passwords, vocabularies or just silly messages left by the programmers and a number search can be used to hunt down those elusive infinite lives pokes. The address at which the string was found is printed – or you get a not found message. If the string was found you can search again to see if it occurs elsewhere in memory. Once you've found the address that you want to change you can use the poke option. With this you're asked for an address and a number to put there.

There are three ways to look at memory: text, number and disassembly. In text mode the contents of the memory locations are displayed in Ascii form. Messages and passwords appear before your eyes as you scurry through memory. Number mode is the same as Ascii except that hex or decimal numbers are displayed instead of letters.

Now for the interesting bit: the disassembler. Disassemblers are invaluable for debugging and hacking into programs, but because of their large size they often overwrite some of the code that you want to disassemble. With the *Insider* you don't get that problem because it sits inside the **Multiface's** Ram.

The disassembler itself can handle all of the Z80 instructions including the undocumented ones often found in commercial programs. The disassembly is tabulated into three columns: number, mnemonics and Ascii. The left hand column gives the contents of memory in either hex or decimal and the right hand column shows the contents of the same locations in Ascii. The central column has the assembly language mnemonics with numbers displayed in either hex or decimal, depending on which number base the *Insider* is in.

The *Insider* requires some knowledge of assembly language and the Z80 to yield its full potential. The program itself is not dif-

### The programmer's point of view

During program development you occasionally crash the system, and can do nothing but turn the machine off and re-load. With the *Insider*, though, you can just hit the red button and see where the program went wrong. A quick look at the registers and flags tells you where the program counter is pointing and that gives you somewhere to start looking for the bug. You're not guaranteed to find it, but the chances of tracking it down are increased with the ability to search a crashed system.

If nothing else you can still revert the **Multiface** to its normal mode of operation and save memory out to tape or disk for examination at a future date.

**Multiface Two+ ● £47.95 (&£1 p&p)**
**Insider ● £14.95 (&£1 p&p)**
**Romantic Robot UK Ltd, 54 Deanscroft Ave, London NW9 8EN ☎ 01-200-8870**

**If you want to delve deeper into the CPC the firmware guide is a must. It lists the various routines in the CPC and explains entry condition, exit conditions and what each routine does.**
**Soft 968, Firmware guide for all CPC's ● Amsoft ● £19.95 ● Brentwood House, 169 Kings Road, Brentwood, Essex CM14 4EF ☎ 0277 230222**

### The hacker's point of view

People have been hacking into games since there have been games to hack and now the protection systems used are getting more and more sophisticated. Games are often encoded, so that they must be decoded before they can run.

With the **Multiface** you can stop a program when it has all been decoded and see the code as it really is.

Checking the contents of the program counter gives you somewhere to start looking for pokes, and if that fails you can always search through memory for the number of lives, shields, energy etc. Once you've found something you want to try it's just a matter of poking that address with an appropriate value and returning to the game. If the poke works the problem's solved, and if it doesn't you just hit the red button again and try something else.

# THE SECRET OF IMMORTALITY

## How to use the *Insider* to poke a game: *Side Arms* (US Gold) gets infinite lives

● Install the *Insider* into the **Multiface** by typing `RUN"DISC"` with the *Insider* disk in the drive. (If you have a **Multiface Two** make sure that the switch on the front is in the down position.)

● Insert the *Side Arms* disk in the drive and type `RUN"DISK"`.

● When the game has loaded press the red button on the **Multiface**, put the *Insider* disk in the drive and press **Return**.

● The number of lives that you have in *Side Arms* is three, but only two blobs are shown on screen to indicate lives remaining. At some stage during the game a location in memory must be set to the number of lives you have and one of the most common methods of doing this is:

```
LD A,lives
LD (address),A
```

To find all occurrences in which the **A** register is loaded with two press **F** on the keyboard and you'll end up in the find routine. Press **1** on the keyboard to enter the list of bytes that you want to search for. In this case you're looking for `LD A,2`, which in hex is 3E 02. Type 3E **(Return)**, 2E **(Return)** and then press **Return** again. (The final return is used to tell the *Insider* that you don't want to enter any more numbers to be searched for.)

● Press **3** to select the start address from which you want to search and type in 0 (Return) to start right at the bottom of memory.

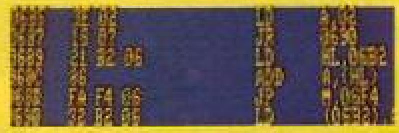
● Press **4** to start the search and up should come the message **** Found at 01CC ****. Note this number. If you press **4** twice more it comes up with two more addresses: 0685 and 9F59. Note these addresses too. A third press of the key gives you 01CC again which means that you've found all occurrences of LD A,02 in the game.

● Press **5** to get back to the main menu and then press **D** to use the disassembler. Enter 01CC as the address when asked and press return. The screen shows the first six lines of disassembly for the address 01CC onwards. You're looking for an `LD(address),A` instruction somewhere nearby to store the number of lives in a memory location.

● This line of attack looks unproductive, so try the next address that was supplied, 0685. Return to the main menu and do the above using 0685 as the address instead of 01CC.




● *Side Arms* as you see it; and (below) as the *Insider* sees it



● This time it looks more promising, with an `LD(06B2),A` at 0690. Return to the main menu again and find B2, 06 this time (the number 06B2 is stored in memory as B206). Only two occurrences of the number appear in the game at 068A and 0691.

● Since we're looking for references to that address in memory rather than the actual memory address we disassemble from slightly before the addresses that were found.

● Disassemble from 0689 and you see the following:

```
LD HL,06B2
ADD A,(HL)
JP M,06F4
LD(06B2),A
```

The HL register is pointing to the address 06B2 and then the A register is added to the contents of 06B2. `JP M,06F4` means to jump to 06F4 if the contents of the A register is negative.

● Do another find – this time for 0689 – and learn how many times a call is made to the subroutine at 0689. Only once is there a reference to that routine, at 0672.

● Disassemble from 0671 and you see `CALL 0689`.

● Now go for it. Assuming a call to that routine is used to decrease the number of lives that you have, all you have to do is to stop the game from calling that subroutine.

In the Z80 there is an instruction **NOP** which does absolutely nothing. It may seem useless, but in hacking games it's very useful indeed. The hex equivalent of **NOP** is 00.

● To stop the game from executing the `CALL 0689` instruction we just fill those three locations with **NOP**. Go back to the main menu and press **P** for poke. When asked for an address type in 0671 and then type 00. Poke 00 into the two following address of 0672 and 0673.

● It's time to try it out and see if it has worked. Go back to the main menu and press **R** to return to the game. Start playing the game and lo and behold you now have infinite lives.

● As you can see from this example poking is not a simple business, and requires more discussion than we have space for here. How much of *AA* we dedicate to this subject depends on *your* reaction...

ficult to use, but if this is the first time that you've used a disassembler you may have problems. If you use the *Insider* simply to put pokes into games then you may as well stick with the basic **Multiface**. If on the other hand you want to wander around memory and explore the inner workings and secrets of the CPC, or even just find your own pokes, the *Insider* is an invaluable addition to the **Multiface**. Machine code programmers should seriously consider it as a debugging aid.




● A name from the past in the lower Rom




●The Z80 registers are displayed at the press of a key

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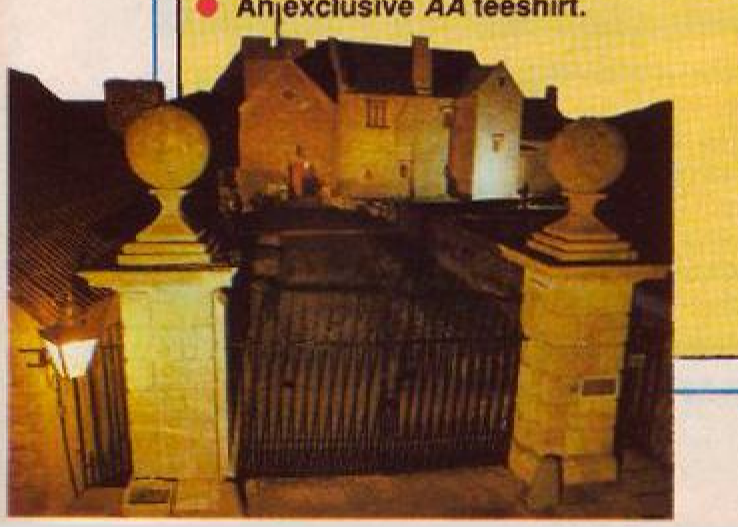
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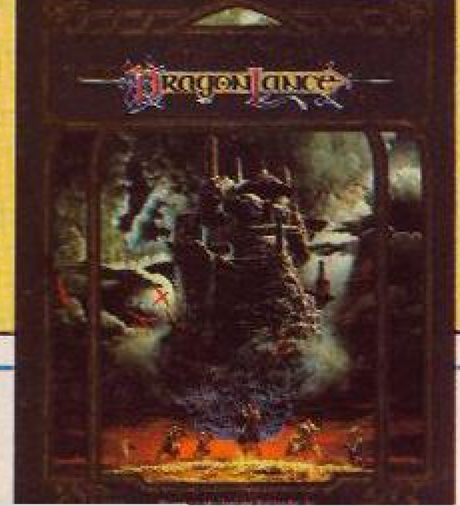
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Gauntlet 1+2, Green Beret, Bombjack 1+2, Zub, Starquake, Equinox, Bounder, Space Harrier, Exolon, Elite, Tau Ceti, Trapdoor, Star Wars Freddy Hardest, Batman, Head Over Heels, I Ball II, Popeye, Firelord, MK Trilogy, L.O.M., Antiriad, Split personalities, Renegade, Motos, Tempest, Mikie, Ninja.
**David Howlett, 53 St Marys Avenue, Alverstoke, Gosport, Hants, PO12 2HU**

Raid, 180, Star Raiders II, Beach Head II, Death Wake, Sir Lancelot, Footballer of the Year, Nonteraqueous, 3D Boxing, SD Snooker, GP Simulator, Leaderboard, Desert Fox, Super Cycle, Aliens, Champ Basketball, Champ Baseball
**Michael Dickinson, 281 Tyldesley Road, Atherton, M29 9AL**

Ranarama, Exolon, Zynaps, Alien 8, Head over Heels, Jack the Nipper, Batman, Thundercats, Super Robin Hood, Feud, Stormbringer, Ghost Hunters, Galvan, The Great Escape. Plus maps for loads of games, send a list of 5 games max to be mapped free.
**Martin Grover, 11 The Croft, Lower Dicker, Hailsham, East Sussex, BN27 4BS**

Stop Press, Extra-Extra, Sorcery+, Ikari Warriors, Knight Lore, Barbarian, 1942, Who Dares Wins II, Bomb Jack, Bomb Jack II, Exolon, Seastalker, Asphalt, Gauntlet, Gauntlet II, Protext, Prospell and the DMP 2000. I also have a huge number of pokes and maps.
**Pal Kroger, Bergjevegen 62, N-4056 Tanager, Norway**

Mini Office I (program that removes all bugs, send SAE), business program (word processor, spreadsheet, graph display etc.) written by myself, send cass or disk and SAE, Deflektor, Gauntlet II, Matchday II.
**Paul Graves, 46 Queens Road, Ash, Canterbury, Kent**

**Feeling helpful? Just send your name, address, phone number (say if you don't want it printed) and subjects on which you're offering help to: *Helpline*, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ. Write on a postcard/back of a stuck down envelope and keep it short or you won't get in (or you'll get cut to 'loadsagames').**

**If you want help contact the appropriate Helpliner – not us. By post include a self-addressed, stamped envelope for the reply – or you won't get one. And phone only in decent hours!**

**Piracy is not welcome: don't try it, you'll get booted off. Keep it legal. And if you receive SAE's, for heaven's sake return them with some acknowledgement. If you want to come off *Helpline* write and say so.**

# HOT TIPS

## Can you take a hint?

## The missing link

*I forgot to let you know how to load* Smart II *screens back into the CPC from within Basic. Here goes:*

```
10 MODE 0:MEMORY &3F00:LOAD "file-
name.BIN",&3F00
20 CALL &BC06,&40:LOCATE
1,26:PRINT:PRINT
30 FOR f=0 to 15: INK
f,PEEK(&3F00+f):NEXT
```

*Use this line to save* Smart II *screens in more conventional format:*

```
40 SAVE "newname.bin",b,&4000,&4000
```

## Multiface unlimited

Perhaps *Multiface* owners would like to know what code lurks within. Using the toolkit, poke this code into address &BF00:

```
F3,01,E8,FE,ED,49,21,00,00,11,00,40,01,00,40,ED,B0,01
,EA,FE,ED,49,FB,C9
```

Which in assembler is:

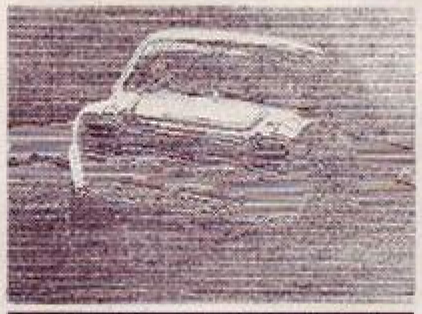
```
DI              Disable Interupt
LD BC,&FEE8     Select Multiface I/O Port OUT (C),C
LD HL,&0000     Source of data in Multiface
LD DE,&4000     Destination in CPC RAM
LD BC,&4000     Data length
LDIR            Transfer all data
LD BC,&FEEA     Select CPC I/O OUT (C),C
EI Enable interrupt
RET     Return to Basic
```

After poking in this code press ESC, R to return to normal. Enter CALL &BF00. When the Ready prompt re-appears type: SAVE "MFROM.BIN",b,&4000,&4000. You should now have on disk or tape a copy of the entire 8K ROM plus the 8K RAM. Of course, if you just want the ROM or RAM you could alter the saving parameters.

Now you can load the code into a dis-assembler and disover the Multiface code for yourself.

**Ian Bentley, Doncaster**

## Print out enhancement



● Before (above) and after (below). Neat, *n'est pas?*



The ESP light pen is good on the whole except in its choice of tones used to represent the different colours on the printout. These have no relation to the grey scale value of the colour, and the defaults give some strange looking results.

Use the following program instead of the DUMP program supplied in conjunction with the chart to choose suitable tones for the printout. This program works on all modes. It calls up ESPDUMP so if you want DUMP on your data disks remember to transfer this also.

Don't worry that the picture on screen looks terrible because all that matters is what the printout looks like.

```
10 'ESP lightpen program
20 'Amstrad Action October 1988
30 'Modified by Marco Bergman
34 '
35 'For x in line 40 use whatever
36 'type of printer you have (1, 2 or 3)
40 i$="x"
50 OPENOUT "d":MEMORY &FFF:LOAD "espdump.bin"
60 DEF FN A=&1000-&200*(i$="2")-&400*(i$="3")
70 INK 1,26:INK 0,0:PEN 1:MODE 1
80 PRINT TAB(13)"ESP SCREEN DUMP"
90 PRINT:PRINT TAB(9)"( P to start printing )"
100 PRINT
110 PRINT "ink 0 :";:INPUT " ",q0
120 PRINT "ink 1 :";:INPUT " ",q1
130 FOR q=2 TO 15:PRINT "ink";q;": ";:INPUT "",i$
140 IF i$="" THEN i$="26"
150 IF i$="p" THEN 170 ELSE i=VAL(i$)
160 INK q,i:NEXT
170 CLS:INPUT "Enter name of screen: ",n$
180 PRINT:INPUT "mode ",m:MODE m
190 INK 0,q0:INK 1,q1
200 LOAD n$:CALL FN A
210 WHILE INKEY$="":WEND
220 RUN 60
```

**Marco Bergman, New Zealand**

£20

## Yet more calls

Here are a couple of tips for 6128 owners:

| | |
|---|---|
| CALL &BD38 | permanently activates caps lock. |
| CALL &BD20 | Flashes the screen. |
| POKE &BDEE,&79 | Disables soft reset (CTRL/SHIFT/ESC) |

**Phillip Brooks, Long Eaton**

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# ACTION TEST

## The very best CPC entertainment

*Heroes of the Lance* – the game AD&D'ers have been eagerly awaiting – is almost here: and we have a full review beginning on page 38!

If it's flying action you're after, there's a stunning simulation from Microprose in which you fly an Apache AH-64 and kill people in the name of democracy (ho hum).

Then there's the Patrol Hydrofoil Missilecraft simulation *PHM Pegasus*, Electronic Art's third big hit in a row.

Also we – oops out of room!



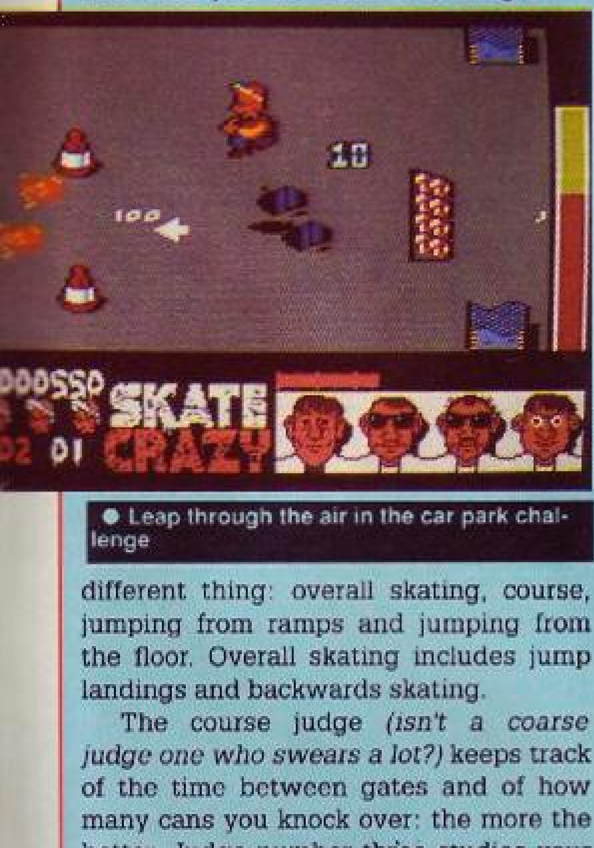
## SKATE CRAZY

**Gremlin ● £9.99 cass, £14.99 disk joystick/keys**

You have **skateboarded.** You have **biked.** You have even **scootered.** But this is the first time that there has been a **roller-skating** game. Not only that: you get two games for your money – **car park challenge** and the **championship course.**

Car park challenge is set (go on, guess) in a multi-storey car park. Each level is set out with cones, cans, ramps, tyres and boxes. Arrows are painted on the floor to guide you around the course.

The car park is viewed from slightly above ground level, with you in the centre of the screen. Four judges sit at the bottom of the screen watching to see how well you do. Each is looking for a different thing: overall skating, course, jumping from ramps and jumping from the floor. Overall skating includes jump landings and backwards skating.




● Leap through the air in the car park challenge

The course judge *(isn't a coarse judge one who swears a lot?)* keeps track of the time between gates and of how many cans you knock over: the more the better. Judge number three studies your jumping from ramps and scores you on the complexity and variety of stunts you execute and the floor jumping judge does the same for jumps from the ground.

### The Verdict

**GRAPHICS ........ 69%**
- ☐ Smooth scrolling in both games.
- ☐ Bright and colourful graphics.

**SONICS ........ 53%**
- ☐ Good continuous tune in car park challenge.

**GRAB FACTOR ........ 74%**
- ☐ One of those games that demands you play it just one more time.
- ■ Frustrating until you work out how to get a decent score for jumping.

**STAYING POWER ........ 66%**
- ☐ Plenty of levels to work through...
- ■ but not a game that you'll come back to after completing it.

***AA* RATING ........ 70%**
- ☐ If what we've told you suggests it's for you – it *is* for you!

After you complete the course the judges score you. If you score high enough then you go onto the next course and if you don't you'll have to try again.

Your view point in the championship course has changed completely to a side view of the skater. Your task this time is to reach the end of the level avoiding the many hazards.

**SECOND OPINION**

*"Makes a pleasant change from endlessly shooting and chopping things. It's a racing game that's actually been quite well done and I had a few moments of fun playing it.*

*I'm a bit doubtful about it's long term appeal, but the game is of a standard that merits interest."* **PbM**

**GREEN SCREEN: No problems**




● A little chappie pokes his head out of a manhole

Bonus points can be gained by collecting some of the objects that litter the humpy landscape. Colliding with the scenary knocks you over and after you've been hit several times you lose a life. Lives are also lost if you fall into the water.

Both the eight way scrolling in car park challenge and the horizontal scrolling in the championship course are smoothish and fast. The graphics are a bit on the chunky side, but colour is used well. A frenetic tune plays throughout the car park challenge and sound effects in both are good, if a little on the rare side.

Neither game in itself is particularly spectacular, but combine rather nicely. Both lose out on difficulty: they're too hard until you've played them a lot and learnt how to perform stunts and negotiate the hazards successfully. All in all a genuine first-class Gremlin goodie. **GBH**

**FIRST DAY TARGET**
**Complete level one of car park challenge**



RAVE

# PHM PEGASUS

**Electronic Arts ● £8.95 cass, £14.95 disk joystick/keys**

Two thirds of the earth's surface is covered with water, so it's hardly surprising that the seas and oceans have often been the scenes of battle. Sea warfare in the eighties still involves missile and projectile combat, but the weapons are a little more sophisticated than arrows and rocks. The fastest ships in modern navies are the hydrofoils which skim across the surface of the water at very high speeds. The star of this strategy/simulation is a **patrol hydrofoil missilecraft (PHM).**

Included with *PHM* is a manual containing information on the eight assignments you can undertake, an explanation of the cockpit instrumentation and a similar description of the operations' map. There's also a breakdown of hydrofoil's weaponry and capabilities, and a spotter card to help identify enemy shipping.

**SECOND OPINION**

*'PHM has a lot going for it – an effective view, well drawn ships, easy controls and achievable goals.*

*A pity the maps are a bit plain, but at least it all fits into memory. Worth a look.'* **PbM**

**GREEN SCREEN: No problem**

There are two screens: a cockpit view from the hydrofoil, and the operations map. The cockpit view is split into smaller windows: a view from the bridge, a binocular view, information of weaponry, speed, fuel, direction, the time factor and a damage indicator. The operations map shows both the area in which the assignment is set and your hydrofoil.

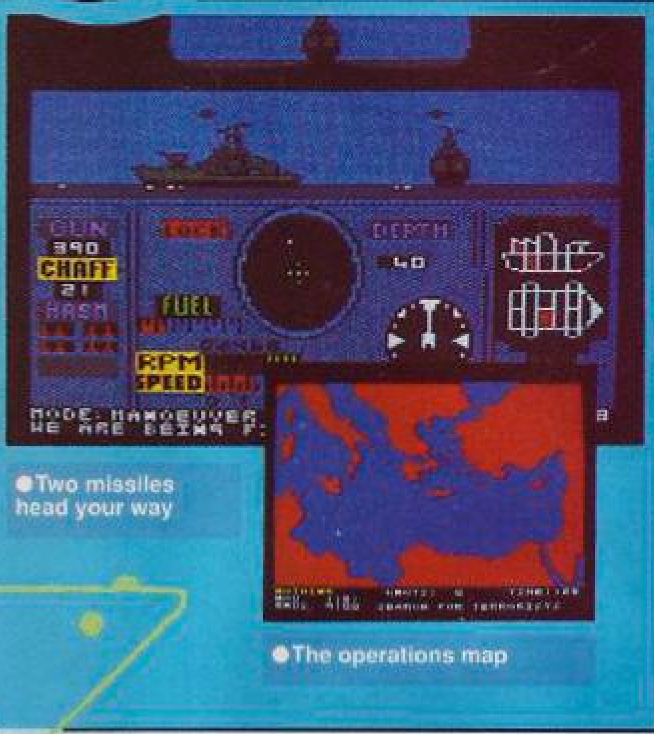
The eight missions get progressively more difficult:from **Battle Training**, a simple introduction to hydrofoil combat, right up to **Jihad** (as in the Islamic Holy War), for the most experienced naval officer. Once you've chosen a mission the operations map appears with your hydrofoil indicated by a dot within a small white circle. If the convoy is visible, or you have any helicopters, then they can also be directed from the operations map. A clock at the bottom of the screen shows the current time and time by which the assignment must be completed. You can watch your hydrofoils progress from the operations map until something exciting happens or you can go to the cockpit view and look out over the ocean.

One feature that makes things happen more quickly is the **time compression function,** which speeds things up by as much as 128 times real time – there's no waiting around for something to happen in this game! Other companies should take note of this feature that prevents players getting bored waiting for things to happen.

Eventually you find some enemies to despatch and the game becomes more simulation than strategy. Simply choose your weapon and target and get blasting.

There are three ways the game can end: **completing the assignment, running out of time** and **being sunk.** Your score is considerably better if you complete the mission because you receive a **survival** and **time bonus.** After the assigment you're given a rank that indicates how well or badly you did. It shouldn't take long before you've gone above the rank of **Deck Mopper.**

The operations map lacks a little in colour and things do get a little confused when there are multiple radar targets displayed. In the cockpit the only real moving graphics appear in the window that overlooks the ocean and here the ships aren't animated – they just move left and right as the hydrofoil turns. The ship outlines are well drawn and you can easily identify the ships from a side view. Unfortunately you see the enemy head-on more often and since there are no head-on pictures on the spotter card you'll have difficulty identifying the different enemy types. Sound is limited to crude explosions and the occasional warning sound when missiles are locked on, or you're in shallow water.




●Two missiles head your way

●The operations map

*PHM* may not be the most technically accurate simulation (that honour is split between *Gunship* – reviewed this month – and *F15 Strike Eagle),* but it does have plenty of action and strategy thrown in. Being able to speed up the clock to 128 times real time is a major asset in getting through the boring bits of an ocean voyage. The different assignments make for a long lasting game, but you're unlikely to play again when they've all been completed. This is the third game in as many months from Electronic Arts and it's of the same high standard. Let's hope they keep up the good work. **GBH**

**Gun shells:** short range, inaccurate. Sinks small vessels after only a couple of hits.
**Chaff:** defensive weapons system that confuses enemy radar guided weaponry.
**Harpoon Missiles:** blows enemy out of the water up to 40 miles away.
**Gabriel Missiles:** similar to harpoon, but slightly more accurate and of shorter range.
**Exocet Missiles:** the most famous anti-shipping missile since the Falklands war.
**Binocular View:** shows picture of ship or helicopter you're locked onto.
**Radar:** tracks enemy missiles and vessels within detection range.
**Helicopters:** longer radar range aids in the location of your enemy.
**Damage:** different areas of the ship house different systems. The more often they're hit the less reliable they become until finally they're disabled completely.

## The Verdict

**GRAPHICS ........68%**
- Detailed ships and map.
- Some animation would have made things more interesting.

**SONICS ........29%**
- Kaboom and ping.

**GRAB FACTOR ........79%**
- Simple scenarios get you going.
- Rush-through -boring-bits option.

**STAYING POWER ...86%**
- Eight increasingly tough scenarios.
- Once completed, never repeated.

**AA RATING ........84%**
- Another superb Electronic Arts game.

**FIRST DAY TARGET:**
**Complete 'A Better Part of Valour'**

# Heroes of the Lance

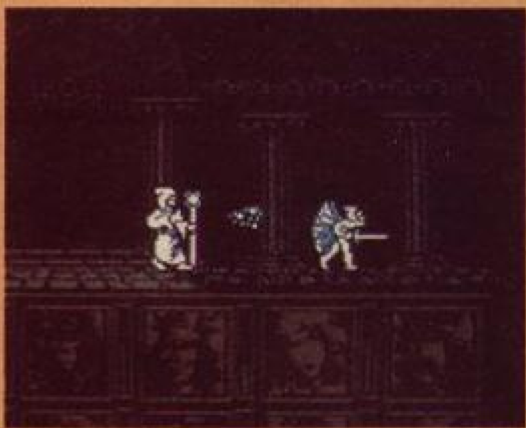
**US Gold ● £9.95 cass, £14.95 disk joystick**



● Hatchling black dragons are tough little critters



● A portal in the back wall leads Caramon to another section of the temple



● Raistlin casts a magic missile at a Baaz Draconian



● Goldmoon leaps across a pit

The long awaited **Advanced Dungeons and Dragons** (AD&D) has finally arrived on the CPC. Unfortunately it's not a role playing game, but you can't have everything. *Heroes* is set in the fantasy world of Krynn, a world in which the Dragon Highlords and their Draconian minions seek to dominate. It's based on the AD&D role playing supplement *Dragons of Despair*, set in the ruins of the temple of Xak Tsaroth. A party of adventures undertake a quest to recover the Disks of Mishakal from the depths of the temple. The Disks are guarded by Khisanth, an huge and ancient black dragon. Many dangers await before you finally confront Khisanth.

There are two areas to the screen: the action window and the character window. In the character window are pictures of the eight heroes: **Tanis, Goldmoon, Caramon, Raistlin, Sturm, Riverwind, Tasslehoff** and **Flint**. Next to each picture is a bar indicating the character's health (hit points). The rest of the screen shows your surroundings and a picture of the currently selected character (top left in the character window).

Control of the characters is all done via the joystick. You can make them run, jump or duck to the left and right. When there's a suitable exit you can move into or out of the screen too. If a monster is also on screen then you can either use ranged combat or charge in and hack at them in melee. Ranged combat includes spell casting, bows, spears and other throwable objects.

A press of the space bar opens up a large menu window with the following options: **character select, magic spells, clerical spells, use, take, give, drop, save** and **restore**. The latter two options are essential in a game of this size. **Character** select allows you to switch the character that appears on screen, which is useful if one is getting badly injured or you want Goldmoon to resurrect someone. **Take** lets you pick things up and **drop** does the reverse. With **give** you can move objects from one character to another and **use** allows you to drink potions, read scrolls, wear rings etc.

Raistlin can cast the following spells from his Staff of the Magius: burning

## SECOND OPINION

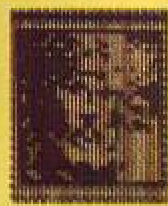
*"As a rabid follower of the Dragonlance books – although not a player – I am impressed with US Gold's efforts.*

*It reminds me of the Gargoyle games* (Tir Na Nog *and* Dun Darach)*. Except it's much better. Furthermore I suspect that this is one game I could actually solve.*

*It has to be said that the graphics aren't much and sound isn't much: but the game remains faithful to the rich tradition of Dragonlance and the world of Krynn."* **PbM**

**GREEN SCREEN: Fine**

## Party time



*Tanis* is the half-elven leader of the group. He's armed with sword and bow and wears magical leather armour.



*Goldmoon*, a human cleric from Que-shu tribe, carries the blue crystal staff, a potent magical artifact. She is the only person capable of using the staff to its full potential.



*Caramon Majere* is a human fighter armed with sword and spear. He's the twin brother of *Raistlin*.



*Raistlin Majere* is a magic user who carries a Staff of the Magiu, with which he can cast a multitude of spells. He's crippled – but still manages to jump further than any other character!



*Sturm* is yet another human fighter. He prefers to use his magical two-handed sword than any other weapon.



*Riverwind* is also from the Que-shu tribe. He was slain by the people of his village, but *Goldmoon* resurrected him.



*Tasslehoff Burrfoot* is a Kender thief. The kender are a small race of people with an insatiable curiosity, which has led to their reputation as excellent thieves.



*Flint Fireforge* finishes off the eight. He's a dwarven fighter armed with a battleaxe and throwing axes.




● Tanis's character sheet




● Spells available from the Blue Crystal Staff

hands, charm, sleep, magic missile, detect magic, detect invisible and final strike. Goldmoon can similarly cast clerical spells from her Blue Crystal Staff. They are: cure light wounds, protection from evil, find traps, hold person, spiritual hammer, prayer, cure critical wounds, raise dead, restoration, deflect dragon breath. If Goldmoon dies then Riverwind, Caramon or Sturm can use the Staff, but only cure light wounds, find traps, cure critical wounds and deflect dragon breath can be used. But that's not all: if she does die things begin to go badly wrong for the party, because you have no way of getting dead characters back. The commonest cause of demise in the early stages of the game is falling down pits and consequently losing the body and all its possessions. Without a body it's tough: you can't resurrect a character. Characters can also die when then take damage from spell and melee combat. The wounds can be healed by use of the cure spells unless the character dies, in which case it's raise dead time again.

Sound – merely a matter of combat and spell casting effects – is limited, and graphics distinctly lacking in colour, though they make up for it a little in detail. Characters run and jump around very well and the ones in cloaks look very dynamic as they leap over pits. Both monsters and heroes are well animated and easily identifiable. Background




● Flint Fireforge throws an axe at a Bozak Draconian

graphics are also detailed and objects lying around the temple can be identified with no problems.

First impressions of *Heroes* are that you've got a game with average graphics and simple sound effects. It takes a few plays before you realise just how much game you've got for your money. A lot of it does look similar, but as you explore the temple you discover more foes and hazards. AD&D artwork has always been of a very high standard and it's good to see that the computer games are getting the same sort of quality artwork on the packaging. Definitely the best game from US Gold this year. Let's hope they do even better with future AD&D projects, and that this sells enough to persuade them to convert them for the CPC. **GBH**

## The Verdict

**GRAPHICS** ....................... **63%**

- ☐ Well animated and detailed monsters and heroes.
- ■ Colour could have been used better.

**SONICS** ............................ **43%**

- ■ Sound effects are simple, but do their job.

**GRAB FACTOR** ........... **86%**

- ☐ Many things to do and objectives to achieve.
- ■ Pit jumping is very difficult and frustrating.

**STAYING POWER** ...... **93%**

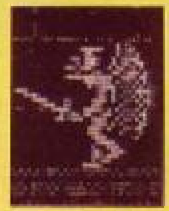
- ☐ Very large playing area to explore.
- ■ Most of the fun is in exploration and so if you do complete it then you probably won't play again.

**AA RATING** .................. **92%**

- ☐ An excellent game from US Gold. It's been well worth the wait.

● Late production difficulties, it seems, may delay the appearance of *Heroes* in the shops. Thus there may be features that do not appear in the pre-production version on which this review is based. These, however, should be minor, and in any case will be improvements. If anything, the game you'll see could be even better!

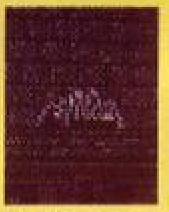
## A bestiary of Xak Tsaroth



*Baaz Draconians* are the smaller of the two draconian races met in Xak Tsaroth. They have a taste for human flesh, but can be killed quite easily. When they do die they crumble into dust.

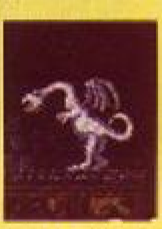
*Bozak Draconians* are slightly larger and nastier than their kin, they also have rudimentary magical abilities. When they die they explode injuring anyone too close to them.

*Giant Spiders* lurk in some areas of the temple. They're unintelligent and treat anything that moves as food. Their small size makes them difficult to hit.



*Gully Dwarves* are the result of interbreeding between dwarves and gnomes. The result is a cowardly race that will plead for mercy if they have an opportunity.

In the early stages of the game the most dangerous thing that you'll meet are the *Hatchling Black Dragons*. They don't like getting close enough for you to hit them, preferring to breath on you which can cause a lot of damage.



*Khisanth* the huge ancient black dragon is your final enemy. He can breath acid over you, claw and bite or hurl magic spells at you. Defeat him and the Disks of Mishakal are yours.

Within the temple you'll also meet *Men* in the employ of the Dragon Highlords. They're all experienced warriors armed with swords and they wear leather armour.

*Spectral Minions* are the spirits of dead humans or demihumans who failed to complete some quest in life. They look as they did when they were alive except that now you can see through them.



*Trolls* may not be the most intelligent lifeform in the temple, but they are one of the more dangerous. They carry no weapons, instead attacking with claws and teeth. Killing them is no simple matter, for unless you completely burn their corpses they have a tendency to get up again after you've killed them.

*Wraiths* are the undead spirits of evil beings cursed to stay in the world of the living. Their touch is deadly, not so much for the damage that it inflicts, but for the life force that they drain from you.

AA RAVE

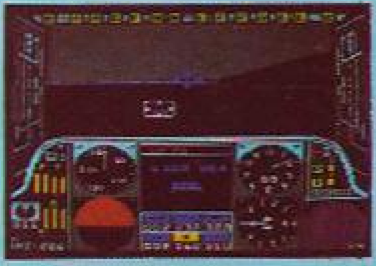
# GUNSHIP

**Microprose ● £14.95 cass, £19,95 disk joystick only**

Now, at long last, you too can sweep into the skies in an Apache AH-64 helicopter – blasting liberals, pinkoes and out-and-out commies as you go. Yes, you've guessed, it's an American chopper: the latest, in fact. Packed with electronics, armed to the teeth, armoured beyond belief – and costing millions. Costly business, war.









This flight simulation has been grounded on the Amstrad until now, and pretty displeased we CPC users have been about it too. Indeed, your campaigning *AA* was making its feelings known about it in *Amscene* as long ago as *AA*25! But to their credit the Microprose coders kept on bashing away, and their patience has at last been rewarded.

But *Gunship* is not just a simulator. You chart the career of a pilot in the US Army. Start off on training flights in the USA. Progress by taking some tours in 'South-East Asia'. Take on the Nicaraguan forces fighting in Central America. The Arabs in the Middle East are causing trouble – blow them away. Ultimately, the Warsaw Pact has invaded Western Europe. Naturally enough, you've got to kill them all. *Gunship:* diplomacy with a vengeance.

If this sort of American behaviour (known throughout the free world) doesn't appeal to you, then you probably won't like the game. Complete the missions as stated and you get promotions and medals. Your reviewer could never get demoted, for some odd reason (which probably says more about the game than it does about me).

To help you fulfill your missions there is the usual Microprose doorstop of a manual. Flying helicopters is a notoriously tricky job, but start 'by the book' and you should be at least able to get into the air without much trouble. As much practice on the American range as you can stand is highly recommended because all the flak is simulated. Even in the relative calm of home territory, however, you can still go west/go for a burton by taking on a hill.

All potential targets are listed in the manual, together with many I could never find. Hard targets you have no trouble at all finding are **T74 tanks, BMP** and **BTR infantry carriers, SAM (surface to air missiles)** and **ZSU (Zenitnaia Samokhodnaia Ustanovka** – that's Russian anti-aircraft gun to you, pal) **armoured vehicles** and **military bunkers**.

Soft targets are helibases, depots and headquarters, and of course the infantry. Coming into a special category of its own is the Hind, the Russian attack helicopter that can outrun you and is as well armoured as the Apache. It has a nasty habit of popping out from behind a hill to shoot you up, an experience you may well not live to regret.

To destroy all these there are four weapon systems available:

- The **all-purpose chain gun** fires High Explosive Dual Purpose rounds, effective against hard as well as soft targets. It tracks with the TADS (see below).
- FFARs (**Folding Fin Aerial Rockets**) are simple unguided weapons that produce a big bang when they hit something. They are very inaccurate, but deal with soft, dispersed targets well enough.
- AGM-114As, more commonly termed Hellfires, are **laser guided anti-armour weapons** that pierce hard targets very effectively, but they can't harm soft targets. They're extremely accurate – unfortunately you can only carry a maximum of 16.
- AIM-9Ls are widely known as Sidewinders. These AAMs (**Air to Air Missiles**) are included in most simulations. They home in on heat sources and are so sensitive they can find the wings and fuselage of aero-




**SECOND OPINION**

***"Microprose are well known for simulations and this is certainly their best to date. Not only is it very realistic and surprisingly fast, but it's also fairly easy to play without wading through the huge manual. More advanced players will still find the game challenging and you can build up quite a collection of medals over your piloting career.***

***The manual contains much information that's irrelevent, but neverless interesting. There's also a quick start option and a handy keyboard overlay to make things a little easier during play.***

***There are two companies that show everyone else how to do it when it comes to simulations: Microprose and Digital Integration. Microprose have moved into pole position. Now it's up to Digital Integration to try and reclaim the title.***

***One last thing that might help you make up your mind: tape owners should beware that this is a continual multi-load game."*** GBH

GREEN SCREEN: Tricky but playable

planes, rather than depending on flying up the exhaust pipe of an engine. Use them on the Hind.

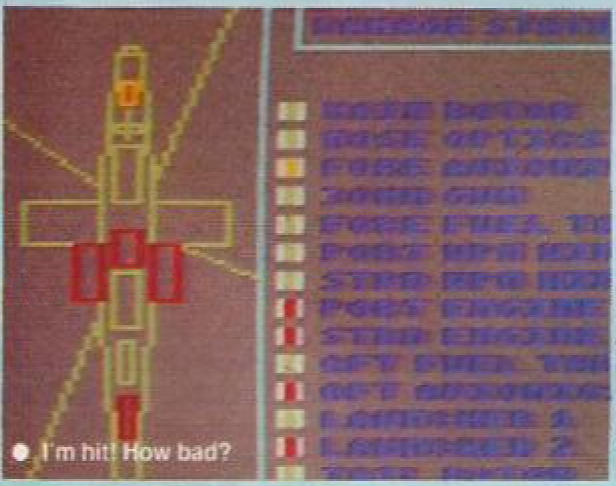
In present-day warfare, the real usefulness of aircraft lies not so much in their flying ability as their use at finding and destroying the enemy. The main aids for this are electronics – or to use the correct term, **avionics.**

The Apache has an extremly impressive array of gadgets. TADS **(Target Aquisition/Designation System)** is the heart of the Apache, and consists of a laser, TV camera and infra-red sensor. The system is located under the chin of the helicopter and does all the hard work for you, pinpointing and identifying targets. Two other useful gadgets are the **radar** and **infra-red jammers** which serve to confuse enemy search and guidance systems for cannon and missiles. The drawback is that switching them on makes you more obvious – and enemy gunners have eyeballs to track you with as a backup system.

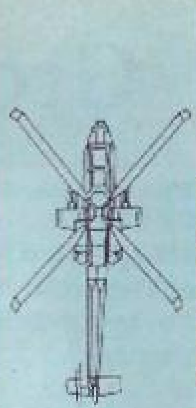
Cruder methods are also available to confuse the enemy electronics. **Chaff** is the nickname for the anti-radar system which launches thousands of strips of aluminium, causing lots of blips on radar screens. **Flares** are simply lumps of magnesium that burn at a high temperature, producing multiple targets for infra-red weapons to lock-on to.



A Hind making a nuisance of himself



I'm hit! How bad?





## The Verdict

**GRAPHICS ...................... 86%**
- True perspective in three dimensions.
- Occasional glitches and wipeouts irritate.

**SONICS ........................... 61%**
- Rotors sound like sewing machines.
- Great explosions and warning noises.

**GRAB FACTOR ........... 64%**
- Tricky to fly around.
- Strong urge to explore.

**STAYING POWER ...... 94%**
- Lots of challenges.
- You can only ever improve.

**AA RATING ................... 82%**
- Too expensive to be Mastergame.

Missions are easily changed. The first variable is the pilot, who can be replaced by a lowly sergeant. Pilots can also be loaded and saved. The second variable is the campaign. Next comes mission difficulty – **regular, volunteer** and **volunteer hazardous** duty.

And there are even more options: easy or realistic settings on flying, landing and weather.; choice of opposition – **third line yokels, second line reserve** and **front line shock troops;** and equipment quality – such as missiles and guns – depending on troop quality.

Once you have chosen your mission you are given a briefing listing your primary and secondary objectives. These are targets that must be destroyed no matter how many others you hit. Intelligence information on troop and equipment quality is available, as well as a sick call option to chicken out.

After that you choose your weapons. The weight limit of the Apache is limited according to the weather. Make sure you leave enough for fuel!

Not so long ago the graphics on *Gunship* would be described as brilliant, and even after the Freescape system used in *Driller* and *Darkside* they still rate very good. Not only is there a true filled in view through the cockpit window, but you can move this view around to see what's to the side and behind you. Occasionally, however, transparent hills mar this effect.

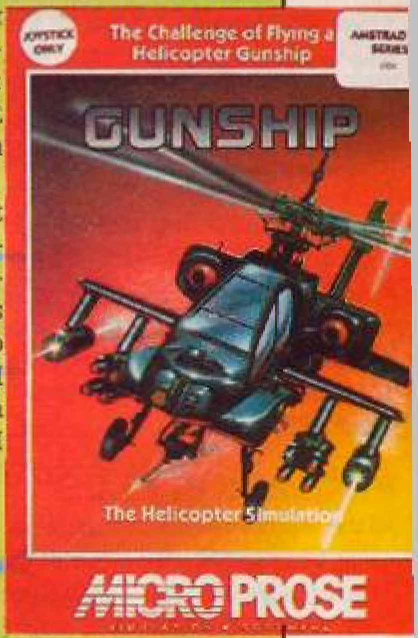
The sound is average, with a rotor racket that gets right under your skin. But enemy missile and radar lock on is announced by sound – a nice touch. Above all, you know when you're hit, 'cos the explosions are great.

The most important skill in flying is balance. If you can balance the cyclic and collective controls, making sure the Apache's nose is pointing just so, then you've mastered flying. Getting to that stage is a challenge in itself. When you're there you can start to fathom combat flying and gunnery.

*Gunship* is *the* simulator: nothing else comes close. I do feel, though, that the CPC implementation is not fully complete. Do the Warsaw Pact really paint their vehicles bright blue? And how come some can't be attacked, for no good reason? Then there's the hills, which appear so solid and then fade away for a few seconds. Worst of all, in the box, along with the excellent manual, there's a little card telling you what's missing on the CPC version. For £15 or £20 you expect features to be added: what you don't expect is a cut-down conversion.

Vietnam is not referred to anywhere in the manual's text. Could this be anything to do with recent history, I wonder? Just a thought... **PbM**

**First Day Target: Survive in 'South East Asia'**




## What you *don't* get for your £20

The Microprose manual for *Gunship* is quite brilliant. It's 80-odd pages of lavish, well written and beautifully illustrated material that assists greatly in the simulation illusion.

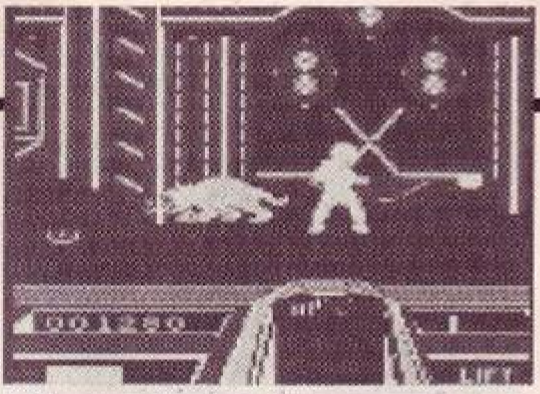
Only thing is, it ain't for the Amstrad. After the superb manual you discover a single plain piece of card which outlines some of what you don't get for your £20 (it's not even complete). Such as:

1. **No roster of pilots – only one at a time**
2. **Amstrad version does not give primary and secondary target locations in mission briefing**
3. **Accelerated time is not included**
4. **Abort mission is not included**
5. **The enemy appears as only one colour on the radar screen**
6. **Vehicle identification is not included**

# DREAM WARRIOR

**US Gold ● £9.99 cass, £14.99 disk joystick/keys**

The world of the future is controlled by huge corporations under the dominion of the **Focus Fellowship**. Little is known of Focus's activities except that they can send dream demons into the mind of anyone who opposes them and make them go insane. Four people, the **Asmen**, discovered a way to combat the dream demons, but unfortunately three of them were dragged in dreams by the demons where they are now slowly going mad. You are the last Asman and must rescue your comrades.



● Beware of the demon

A horizontally scrolling playing area covers most of the screen and a panel at the bottom indicates your **depth of sleep, score, card carried** and a **picture of the dreamer**. If your depth of sleep meter reaches zero then you wake and the game is over.

Everything you need to rescue the dreamers is in the dream, but so are the hazards to prevent you. Four types of globe drift about and when shot they deposit their contents. The four colours each contain a different thing: blue have bits of the dreamer's psychic image, green have energy for the dream hopper, red contain safe access cards and grey have lift access cards.

A safe contains deep sleep draughts so that you stay asleep longer and lifts allow travel between levels. The dream hopper allows movement from dream to dream. To complete a dream you must collect all the pieces of psychic image for the dreamer and when all three dreamers are free you can look for the doorway to the most dangerous dream demon, **Ocular**.

Scrolling is smooth and fast. The graphics are perhaps a little too blue, but the sprites move well and the Asman is animated very well. Sounds effects are almost non-existent and tunes are played silently.

Collecting bits of dreamer is time consuming and leads to boredom. It's just a matter of shoot the globe, collect the blob and repeat until your mind shuts down. Sleep well. **GBH**

**FIRST DAY TARGET**
**Free a dreamer**

### SECOND OPINION

*"Graphics are quite nice, the gameplay is fun. Playing it for a while show up the deficiences such as naff animation and occasional droughts of safe cards which mean a slow, lingering death.*

*The idea is quite good and it's just a shame it wasn't taken a bit further. Not enough game here."* **PbM**

**GREEN SCREEN: No complaints**

### The Verdict

**GRAPHICS** ......58%
□ Smooth horizontal scrolling.
■ Just a touch too much blue.

**SONICS** ......24%
■ Needs more effort.

**GRAB FACTOR** ......57%
□ Nearly always something to do.

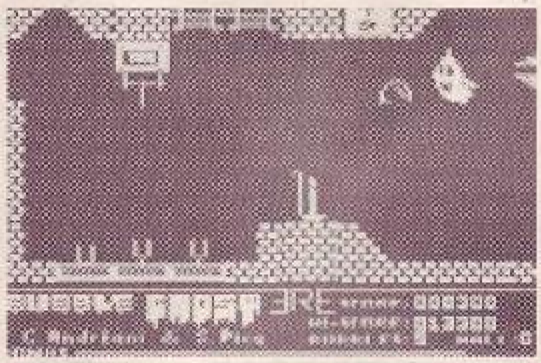
**STAYING POWER** ......48%
□ It'll take a long time to complete...
■ Waiting for the right globe to come along is frustrating.

**AA RATING** ......51%

■ Arguably not game of the year.

# BUBBLE GHOST

**Infogrames ● £9.95 cass, £14.95 disk joystick/keys**



● I'm forever blowing bubbles

You may think being a ghost is just a matter of drifting around wearing a sheet and saying *boo*, but you'd be wrong. The star of this spooky story, a poor unfortunate ectoplasmic being, has lost his soul. He knows where it is – in a bubble – and he wants it back. To become whole again he must guide his bubble through the castle.

The castle is made up of a multitude of interconnecting rooms, each filled with hazards. Nothing worries the ghost – he can pass straight through anything without a worry – but the bubble is much more sensitive about things and bursts when it touches anything that isn't the ghost. Moving a bubble when you have no body is not easy. You have to blow it everywhere.

Each room is made up of lots of sharp objects just waiting to pop your bubble: knives, spikes, candles, disembodied heads and even the walls. Electric fans blow the bubble off onto a spiky bit.

Surprisingly for an Infogrames game there's no music, but the sound effects are good. The background graphics are simple and the sprites are flickery, but there are some humorous effects: when the bubble bursts the ghost looks most annoyed.

This is a simple game in concept that's mindbogglingly frustrating and also immensely addictive. It'll wear off, but you'll get a few hours of enjoyment.
**GBH**

**FIRST DAY TARGET**
**Complete 10 screens**

### SECOND OPINION

*"I've always liked CPC games that originate in France. They seem to have a style you just don't find anywhere else – which is not necessarily to say they're any better.*

*Bubble Ghost* has an original theme, goodish graphics and fiendishly tricky gameplay. For a while you think you've cracked it only to fail on a new screen. Good Stuff.* **PbM**

**GREEN SCREEN: No problem**

### The Verdict

**GRAPHICS** ......54%
□ Some humorous touches to the graphics.
■ Flickery sprites.

**SONICS** ......35%
□ Effects are fine, but there aren't many.

**GRAB FACTOR** ......68%
□ A nice idea that works well.
■ Some early rooms are too difficult and stop the enjoyment.

**STAYING POWER** ......56%
□ Large castle to explore.
■ May tire of it if you keep getting stuck in the same room.

**AA RATING** ......61%

□ A fun game unfortunately spoiled a little by flickery graphics.

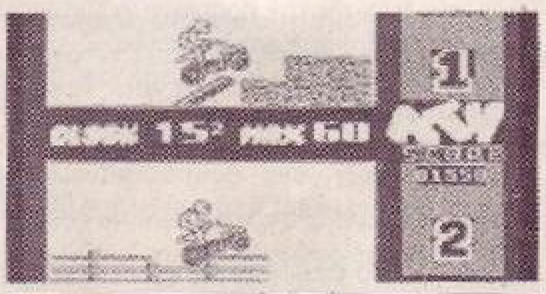
# ATV SIMULATOR

**Code Masters ● £1.99 cass**
**joystick/keys**

**All Terrain Vehicles** (ATV's) are tractors, more or less, that can travel over just about any kind of terrain. *ATV Simulator* is either a simultaneous two player or single player game set over a series of courses of increasing difficulty.

The screen is split across the middle: one half for each player with a score panel to the right and a clock below the playing area. Your ATV sits in the centre of horizontally scrolling playing area.

Your objective is to reach the end of the stage before the timer reaches the preset time limit. Succeed and you go onto the next course; fail and it's game over.



● Two player action

**SECOND OPINION**

*"Hm, I wonder... Gary suspects this is too easy, but I'm not so sure. Obviously with a budget game many people who buy ATV are likely to be at school rather than college or at work – many, I said, not all! – and it may well be the case that they find the much-vaunted Code Masters 'playability' about right for them.*

*Besides, what's easy for one person (in this case someone who plays games constantly) may not be easy for another. What do you think?"* **SC**

**GREEN SCREEN: OK**

The first two courses are 'Sand Duning' and 'Grass Trakin', neither of which are particularly difficult to complete. 'Icebergs' is the third one and things begin to get tougher from here onwards with 'Pyramids' very hard to complete.

Sound effects are basically engine noises and collisions, but you do get a pretty good tune on the title screen. The horizontal scrolling is smooth and fast. The sprites are only in two colours and not particularly colourful and scenery is likewise lacking in colour.

## The Verdict

**GRAPHICS ....................... 56%**
□ Smooth horizontal scrolling, even in two player mode.
■ Colour could have been used better.

**SONICS ............................ 63%**
□ Good music on the title screen.

**GRAB FACTOR ........... 66%**
□ Two player action adds to the fun.
■ Possibly too easy to begin with.

**STAYING POWER ...... 52%**
□ Courses increase in difficulty...
■ but they do so in jumps rather than steps.

**AA RATING .................. 63%**
□ Worth a look.

As with most of the Code Masters stuff it's not brilliant, but not appalling either. Good fun to start with, but perhaps a little lacking in depth and sophistication over the long term. **GBH**

**FIRST DAY TARGET**
**Complete 'Icebergs'**

# ACTION FORCE

**Virgin ● £8.95 cass, £14.95 disk**
**joystick/keys**

You're Wild Bill, pilot of the **Dragonfly** helicopter and you have a mission: to ensure the safe arrival of the **A.W.E. Striker** at its destination. The Striker, though, has two problems: it bumps into things and it falls down holes, and neither is very good for it. There are also lots of nasty Cobra forces out there just waiting to blast anything into little pieces.

Across the bottom of the screen, where your score is shown, is a status panel informing you of the condition of the Dragonfly and the Striker. In the upper part is the horizontally scrolling playing which is centered around your helicopter.

There are several levels to the game, each more difficult than the last, but still very similar in style of play. Strewn about the landscape are holes that must be bridged and barriers to be destroyed so that the Striker can exit at the end of the level. Fortunately there are sections of bridges covering some of the holes, but even so there are more holes than bridges. You therefore have to carry bridge sections from place to place and make sure the Striker gets through. Any barriers that you come across must be shot to pieces or **bang** goes the Striker. That's about it: you hurtle around blasting enemies and protecting the Striker.

● The Dragonfly hovers menacingly




**SECOND OPINION**

*"The combination of inter-game messages and one-life games is not a good one. Inevitably with a new game you take time to get to know your way about, and to be held back like this – especially in a game that moves so fast – is very frustrating.*

*Still, you soon improve, after which things pick up. A bit."* **SC**

**GREEN SCREEN: No complaints**

Considering the speed at which the landscape scrolls it's still remarkably fast. It's a pity as much effort wasn't put into the graphics as was put into the scrolling – they're lacking in both detail and colour. Sound is just a handful of effects and there are no tunes.

*Action Force* is one of those games that's **frustrating**, but for the wrong reasons. Level two is incredibly tight on timing to destroy the first obstacle before the Striker gets to it and that tends to annoy rather than make you play again. At the start of the game and between levels a message squelches onto the screen at an yawnfully slow rate. They're interesting the first time, but in the middle of a game the last thing that you want is a tedious delay before you go to next bit. £9 is lot to ask for this sort of thing. **GBH**

**FIRST DAY TARGET**
**Complete level two**

## The Verdict

**GRAPHICS ....................... 49%**
□ Excellent scrolling that's both fast and smooth.
■ Ineffective use of colour.

**SONICS ............................ 23%**
■ Feeble sound effects.

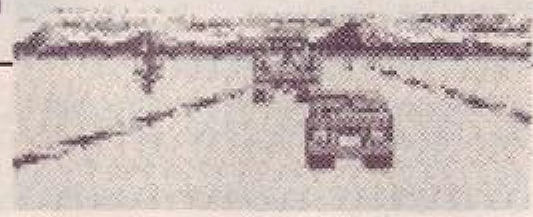
**GRAB FACTOR ........... 45%**
■ Infuriatingly difficult on level two.
■ Inter-level messages are tedious and superfluous.

**STAYING POWER ...... 51%**
□ It should take a long time to complete all of the levels.
■ Only one life? Unplayable.

**AA RATING .................. 46%**
■ Not a bad idea – just badly executed.

# OVERLANDER

**Elite ● £9.99 cass, £14.99 disk joystick/keys**



Take one nice green planet, remove the ozone layer and what do you get? A desert world where the population is forced to live in huge underground cities so that they're not exposed to the lethal solar radiation. The only people who travel from city to city are the Overlanders, who drive around in custom built cars and travel between cities for fun.

A dashboard occupies the lower third of the screen and the rest is taken up with the road. Information on your weapons systems, speed and fuel is shown on the dashboard and the road has a view of your car from the rear as well as any badguys or obstacles in your way.

Your car can be equipped with a wide range of equipment to help in arriving at your destination. They include missiles, bulletproofing, turbo chargers and so on. All cost, and some are very expensive.

With your car equipped you set off for your destination and then you encounter the Surface Dwellers. They live to kill, and Overlanders are the only thing that they can get. Surface Dwellers are split into gangs that employ various tactics to destroy you. Kamikazee's (their spelling) are suicidal motorcyclists; roadhogs try to push you off the road; crawlers use shot gun emplacements and wrecked cars and offroaders are heavily armed and drive armoured trucks.

The graphics are lacking in colour, but the 3D perpective road moves quite smoothly and quickly towards you. There are no tunes in the game, though there's an excellent one on the title screen. Sound effects are abundant and serve their purpose.

At first it just looks like *Outrun* without the colour, but with speed. After extended play, however, you discover an element of strategy involved in deciding which weapons to arm yourself with and which cargo to choose. Not brilliant, but definitely not awful either. **GBH**

**SECOND OPINION**

*"From an objective standpoint this game has little content, but you try avoiding a cherry blossom biker at 160 kph. I'll be coming back to this game after I've got over the nervous breakdown caused by frustration."* **PbM**

**GREEN SCREEN: A little trickier than colour, but still OK.**

## The Verdict

**GRAPHICS ........ 56%**
- ☐ Road moves smoothly towards you.
- ■ Lacking in colour.

**SONICS ........ 59%**
- ☐ Great title tune.

**GRAB FACTOR ........ 64%**
- ☐ Gratuitously blasting away at things is fun.
- ■ Kamikaze bikers are very annoying.

**STAYING POWER ........ 58%**
- ■ First route is just a little too tricky to complete.
- ☐ Plenty of routes to complete in a quest for the high score.

**AA RATING ........ 81%**

- ☐ Not mind blowing stuff, but fun.

**FIRST DAY TARGET**
**Complete the first mission**

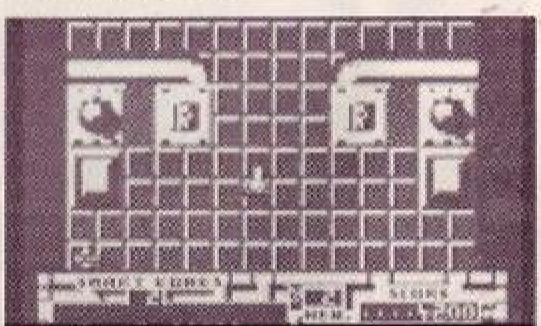
# MARAUDER

**Hewson ● £9.99 cass, £14.99 disk joystick/keys**

Long, long ago the Jewels of Ozymandius were stolen by a cruel and despotic civilisation and buried deep beneath the surface of the planet Mergatron. You need to recover the jewels and in your Marauder Battlecar arrive on the planet, which is protected by an ancient defence .

An aerial view of the scrolling playing area shows your car and its surroundings. A panel below shows your lives, smart bombs and any messages that appear.

Then there's the weapon beacons which flash through **red, yellow, cyan, blue, purple** and **green**. **Red, yellow** and **cyan** are beneficial: they give you an extra smart bomb, shields and a bonus life respectively. **Shields** makes you invulnerable for 10 seconds and the smart bombs blow away everything on screen. **Blue, purple** and **green** are harmful: **control reversal, lose a life** and **laser jammed** are the consequences.



● Approaching an offroader

The graphics are well drawn, colour is well used and the scrolling is very smooth. An excellent tune plays on the title screen and another even better one plays throughout the game. If you prefer sound effects then you can turn the tune off and have them instead.

First impressions of just another shoot-'em-up with pretty graphics disappear after a few games. The weapon beacons, essential to solving the game, make a difference. Just going for extra lives is not a good idea, and there are times when the only way out is to use a smart bomb. In some ways it's like *Highway Encounter*, with problems to be solved, hazards to be avoided and bad guys to blast. It has a similar addictive quality that keeps you wanting to play just once more. And the music is brilliant. **GBH**

**SECOND OPINION**

*"A curiosity, this: it's a poorish game by Hewson's high standards, yet it would be a blockbuster for many others.*

*Yet another vertical scrolling shoot-em-up, but one requiring thought as well as fast coordination."* ***PbM***

**GREEN SCREEN: All clear**

**FIRST DAY TARGET**
**Complete zone 1**

## The Verdict

**GRAPHICS ........ 78%**
- ☐ Excellent use of colour.
- ☐ Smooth vertical scrolling.

**SONICS ........ 84%**
- ☐ Fantastic title tune...
- ☐ And an even better one in play.

**GRAB FACTOR ........ 76%**
- ☐ Immensely addictive.
- ■ Very frustrating, until you learn your way around.

**STAYING POWER ........ 72%**
- ☐ Completing one level is tough enough.
- ■ Annoying when you're sent a long way back becasue you lost a life.

**AA RATING ........ 73%**

- ☐ A very good game...
- ■ but Hewson are capable of more.

# BIONIC COMMANDO

**Go ● £9.99 cass, £14.99 disk joystick/keys**

Once upon a time there was a nice little planet inhabited by happy people. One day some aliens come along and lay waste to the planet. Ten years pass and the aliens manage to create a doomsday weapon to erase humankind from the planet forever. The doomsday missile must be deactivated and only the elite unit of bionic commandos can do the job.

You are the green and black figure trying to avoid or kill the green and black figures hiding in the green and black scenery. The green and black screen scrolls in four diections as you try and reach the end of the stage. There are five stages: the dying forest, the castle, infiltration, the control room and the silo.

Each stage is made up of many interconnecting platforms and is swarming with enemy troops. Some areas are also mined and occupied by bees with a stinging tendency. Later levels have cannon, suicide troops and giant robots that all have the same idea: to kill you. Movement between platforms is achieved by extending your bionic arm towards the platform in question and then pulling yourself up.

Anyone with a colour monitor will instantly think that there's something wrong with it, but they'll be wrong because the game really is in green and black. In subsequent stages the two colours change, but it's still bad having only two colours. The graphics in general are poor and the scrolling leaves much to be desired. Sound is just a mixture of crude explosions and shooting effects.

There have been games in the past looking distinctly like a straight port from another Z80 based computer that shall remain nameless. This one in particular looks terrible. Graphics like this should have died out years ago and the gameplay leaves a lot to be desired too. **GBH**




● Where am I?

**SECOND OPINION**

*"Bionic Commando – the first game for the colour-blind! Sarcasm apart, the game does have a certain quality and I found myself playing it quite a lot. I daresay that over the medium term (next Wednesday) I'll lose interest."* **PbM**

**COLOUR SCREEN: All green**

## The Verdict

**GRAPHICS ......24%**
- □ Animation is done fairly well.
- ■ Where has all the colour gone?

**SONICS ......26%**
- ■ Bang.

**GRAB FACTOR ......45%**
- □ Doing tarzan impression while hanging by an extended arm is the most enjoyable part of the game.
- ■ Frustrating when you die in an unavoidable situation.

**STAYING POWER ......36%**
- □ Stages are difficult, but not impossible to complete.

**AA RATING ......39%**
- ■ On the one hand you get *Heroes of the Lance* and on the other you get THIS!

**FIRST DAY TARGET**
**Complete stage two**

# URIDIUM

**Hewson ● £1.99 cass joystick/keys**

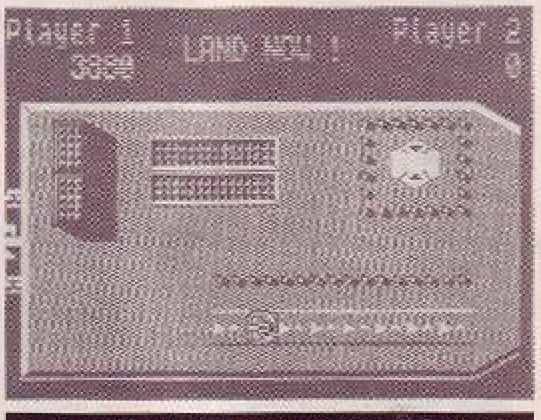
The solar system, you'll no doubt be surprised to find, is under attack yet again. Some little aliens have placed huge dreadnoughts around the fifteen planets in your corner of the galaxy. Mineral resources are being drained from the core of the planets, and this is considered naughty by the populations of the worlds. Some heroic person must get up there and stop them and you're the one to do it.

You climb into the seat of your Manta class space fighter and head for the first of the dreadnoughts. Each dreadnought is one screen high and several wide. As you fly across the surface of the huge ship it scrolls horizonally beneath you. Aliens sweep in from both sides of the screen to destroy anyone coming too near.

To knock out a dreadnought you have first to destroy the aliens flying across its surface and blast any ground targets that you come across. Take care with the meteor shields and communications aerials, though, because your ship explodes on impact. When everything has been blasted a 'land now' message appears and you just touch down to gain loads of points and go to the next dreadnought.

There's not much colour: everything's in two colours, but they do change from level to level. The graphics are detailed and the horizontal scrolling fast. A wonderful tune plays on the title screen and the sound effects are pretty good too.

The plot may not be very sophisticated – you fly around and blast away at things – but there is a certain element of satisfaction when you destroy a dreadnought. Great value for money. **GBH**




● Your Manta flies across the surface of a dreadnought

**SECOND OPINION**

*"I found the homers made this a very difficult game, but fortunately Uridium has that elusive quality that makes you come back to it again and again."* **PbM**

**GREEN SCREEN: No problem**

**FIRST DAY TARGET**
**Destroy three dreadnoughts**

## The Verdict

**GRAPHICS ......57%**
- □ Fast horizontal scrolling.
- ■ Colour could have been used more.

**SONICS ......56%**
- □ Brilliant title tune.
- ■ Adequate effects.

**GRAB FACTOR ......58%**
- □ Plenty to blast and a little to think about.
- ■ Frustrating having to completely restart a level when your ship is destroyed.

**STAYING POWER ......54%**
- □ Fifteen dreadnoughts to destroy.

**AA RATING ......68%**
- □ Good old fashioned shoot-em-up.

# ROMANTIC ROBOT *present*

## 1988 – THE YEAR OF THE ROBOT

RESET ● **multiface two** ● STOP

If you wish to be able to STOP any program at any time and COPY it to disk or tape, fully automatically, at a touch of a button, then MULTIFACE 2+ is the ONLY answer. There are no other comparable hardware devices, and the software copiers simply cannot compete.

***Firstly you cannot compare the SUCCESS ratio of any tape copier with the MULTIFACE – you get what you pay for (and we throw in a lot more with the MULTIFACE . . .).***

***TAPE COPIERS always need to be loaded first, whilst MULTIFACE has all software in ROM for instant use. TAPE COPIERS can only attempt to copy a program as it stands, before it loads – there are various protections in the way and not enough memory for both the program to be copied and the copier. MULTIFACE is different: you can load any program from TAPE or DISK, run it as you wish and activate the MULTIFACE whenever you need it. Once you SAVE a program, be it to DISK or TAPE, you can CONTINUE it, SAVE it again if you wish, etc. In fact, you can play games as never before: there is no need to start from the beginning each time you play a game (as you would with a tape copier – if it could copy in the first place . . .). Since you can SAVE a program at ANY TIME and continue it, you can actually SAVE as you progress through a game. If, eventually, you loose all your lives, you can just load the latest saved version and continue from there! That is, if you do not manage to get INFINITE LIVES to start with: MULTIFACE has a built-in TOOLKIT which allows you to STUDY and ALTER anything in any program; you can thus POKE in infinite lives, ammo, etc.***

MULTIFACE is extremely simple to use, friendly, idiot-proof, menu-driven with on-screen instructions, fully automatic – PURE MAGIC. It can be used on any CPC, comes with a cable and an extension bus for £47.95 ONLY! By the time you buy 10 programs on tape instead of disk – MULTIFACE will put them on disk for you – you will have saved some £50 which is more than the cost of a MULTIFACE. The money you save on further tapes is all yours!

**MULTIFACE – WORTH EVERY PENNY, SAVES YOU POUNDS!**

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Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely fool-proof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

*Multiface II* must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

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**SPEEDTRANS PLUS2** transfers over 200 programs to Disc, some of the latest it will do are MADBALLS, FREDDY HARDEST (both games) BASKET MASTER, MATCHDAY II, PHANTOM CLUB, GRYZOR (main program), SUPER HANG ON.

These latest Speedlock types can be identified by the whole screen flashing with horizontal bands of colour immediately after the first file has loaded. Do remember that **SPEEDTRANS PLUS2** does not save all the memory in the hope of having saved all the game. It saves exactly the right length of code. All screens are saved in compressed form – some as little as 4K (Basket Master) - thus saving even more disc space.
**SPEEDTRANS PLUS2** is the most sophisticated Tape-to-Disc transfer utility for SPEEDLOCK protected programs ever published. It will certainly transfer more games than any other Speedlock transfer program on the market and with much greater ease. Other transfer programs require you to know how long the game code is so that you may run an alternative program for the long games which does not save the loading screen. This is done because they do not make use of the extra memory available on the CPC 6128 or from the use of an extra RAMPACK (DK'Tronics 64K or greater.) This program is highly intelligent in that it first reads the loader from the tape and establishes which type of protection is in use from 6 alternatives. At the end of the loadit then finds out how long the code is and if it is too long to be saved to one file it will move the excess code into the banked memory and save the game in two parts and write the appropriate loader program. The screen will also be moved into a bank and compressed before saving. This can mean screen files as small as 4k (Basket Master) depending on mode and content. All this adds up to a lot less disc space being used than with other transfer programs and you will nearly always get the loading screen saved. The exception to this is when there is no loading screen (as in SCRABBLE) or when the screen is blanked out and more code is loaded into the screen memory, as in BMX SIMULATOR and MADBALLS for example. Try getting a screen with Multiface or any other imager. These imagers are only capable of saving what you have in memory at the time the button is pressed. What happens in multi part games? you have to press the button for each part thus wasting precious disc space. They also save far too much code and therefore waste even more space and saving too much code means longer loading times from disc. Programmers are now checking to see if you have an imager plugged in an if you have the program will not load. Imagers also have to be in place before you can reload your program and saved programs can only be reloaded in to the machine in which they are saved. **SPEEDTRANS PLUS2** creates totally stand-alone files and if you have nother CPC even without extra memory they will run prefectly. It also displays the saving name on screen at the start of the load with all except the very latest games. In all cases the disc saving name is displayed while the save is carried out. To run the transferred game just RUN this name. Another intelligent feature of **SPEEDTRANS2** is that the very first thing it does is to find out which drive it is in. This means that if you have a two drive system you may run the program from drive B by typing RUN"B:DISC" or :B:RUN"DISC. However the saving will ALWAYS be to DRIVE A so with a single drive you must change the disc when prompted on screen.

**DISC:- UK £14.99 – EUROPE £16.25 – REST OF WORLD £17.00**
**Upgrade your SPEEDTRANS PLUS** – send your disc together with: **UK £2.00 – EUROPE £3.25 – REST OF WORLD £4.00**
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## DMP 2000/2160/3000/3160

The printer buffer presently in the DMP 200/3000 series is a 2K RAM. Most of this RAM is used by the printer's operating system leaving an average 1/2K as buffer space. Our upgrade kit contains a new static RAM chip which will increase the printer buffer by 6K (about 4 pages of text). This upgrade allows all Download Characters to be re-defined allowing the user to design special characters for use with scientific and other programs. The kit is supplied with full pictorial instructions to allow the amateur to carry out his own modification (the DMP2160 takes about 7 minutes). If you don't think you are up to it your local TV shop can do the job in approximately 15 minutes

**UK £12.50 – EUROPE £13.75 – R. of W. £14.50**

## FIRETRANS

This utility will transfer a number of FIREBIRD programs from tape to disc automatically including most opening screens in full colour. FIRETRANS will work equally well from tape but will be more convenient to use if converted to disc with SAMSON/Transmat. It will transfer WILLOW PATTERN, RUNESTONE, CHIMERA, GUNSTAR, PARABOLA, REALM, SPIKY HAROLD, BOOTY, DON'T PANIC, GUNFRIGHT, STARGLIDER, NINJA MASTER, HELICOPTER, and some version of THRUST, HARVEY HEADBANGER and BOMBSCARE.

**TAPE:- UK £5.00 – EUROPE £6.25 R. of W. £7.00**
**DISC:- UK £8.50 – EUROPE £9.75 – R. of W. £10.50**

## NEW COMPACTOR NEW

COMPACTOR will allow you to load a standard 17K screen, set the mode, border and ink colours and then save it as a compressed screen contianing its own mode and ink colour information. Most screens compact down to an average of 9K which is an enormous saving on disc space. Loading time of compressed screens is also proportionately reduced.

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## TRANSIT

TRANSIT is a disc-to-disc file copier which handles file upto 40K in length in one pass. It will copy from drives A-A, A-B, B-B and B-A making an ideal utility for use with 5 1/4" second drive.

**TAPE:- UK £4.50 – EUROPE £5.25 – R. of W. £6.50**
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## UTILITY DISC No. 1

This utility disc contains 5 programs, all menu driven. They are SAMSON, TRANSIT, QCLONE, VIEWTEXT and the fast disc FORMATTER.

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AMSTRAD COMPUTER SHOW

## NEW NIRVANA NEW

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**DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00**

## NEW SHAREPLAY NEW

**THE STOCK MARKET SIMULATION**
**(All CPC's)**

This is a serious educatinal program for 1 to 6 players and provides all the enjoyment of playing the stockmarket without any risk of personal bankruptcy! Each player can buy and sell shares and the target is the first to reach £1,000,000. The program includes a stockholding portfolio listing the shares purchased, their number, cost and market value. Bank balances are also shown. Graphical representation of market fluctuations are given in the form of a bar graph. Also included is a high score table. Scores are automatically saved at the end of each session.

**DISC:- UK £14.99 – EUROPE £16.25 – R. of W. £17.00**

## NEW WORDSEEK NEW

**THE WORDSEARCH PROGRAM**
**(All CPC's)**

This educational program will tax even the most agile mind. The aim is to find the hidden words in a 15 by 15 puzzle within a set time limit of 30 seconds. The time limit is extended for every correct letter of the current word found. You may create your own puzzle consisting of up to 10 words which can be saved to disc and used at any time. You may only retain one puzzle at a time but if you choose not to use your own puzzle then the program will randomly select one form the library of 50 on the disc. All of the puzzles in the library are made up of 10 words each consisting of 1x8 letter, 1x7 letter, 2x6 letter, 3x5 letter, 2x4 letter and 1x3 letter words. This ensures equal difficulty regardless which one is randomly loaded. The program contains a print option (for Epson compatible printers) allowing a hard copy to be made of any puzzle created. Keyboard/Joystick options are also available.

**DISC ONLY – U.K. £14.99 – EUROPE £16.25**
**REST OF THE WORLD £17.00**

## NEW TUNESMITH NEW

**TUNESMITH** is a simple to use sound utility which allows you to use the keyboard to play and record your tunes. No knowledge of music or Amstrad sound commands is required all you need to be able to do is whistle the tune you play or record. The octave and period of notes is variable and the program includes synthesizer and vibrato effects. **TUNESMITH** will save any tune as a basic file which can be RUN, CHAINED or MERGED into your own program.

**DISC:- UK £14.99 – EUROPE £16.25 R. of W. £17.00**

## SAMSON

**SAMSON** has been developed by us to transfer not only the normal programs but also many of todays where the code is much longer. **SAMSON** differs in many ways from other Tape-to-Disc utilities, the main differences being: * SAMSON retains original file suffixes (SAMSON.SCN will be saved as SAMSON.SCN) * Improved file relocation method * Elaborate Tape-read/Disc-write system which reduces Tape Motor, Slave Replay and Disc Drive Motor wear substantially. * A large reduction in tape transfer time is also achieved in all but a few cases * NEW "SPLIT" option for todays longer games (we will be using this option in future routines) * All file information is displayed on screen and can be echoed to your printer if needed. SAMSON also transfer itself to disc.

**TAPE:- UK £7.50 – EUROPE £8.75 – R. of W. £9.50**
**DISC:- UK £11.50 – EUROPE £12.75 – R. of W. £13.50**

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(All CPC's)

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* **REDEFINE ANY/ALL KEYBOARD KEYS (ASWERTY)**
* **DESIGN SPECIAL SCIENTIFIC CHARACTERS/FONTS**

Takes all the hard work out of character designing making it a pleasure. The printer part of the program will only work if your printer is capable of DOWNLOADING and is EPSON compatible – see your printer manual. Works with 7-bit or 8-bit output (8-bit port). All the designing is done "On-Screen" so you can see exactly what you are doing. You can save your newly designed characters to disc and reload them at any time into a basic program and into most Word-Processors. The program also allows the user to redefine any or all of the keys on the keyboard. This feature will be useful for those who require an ASWERTY keyboard. The disc also contins twelve sample fonts for experimentation

**TAPE:- UK £7.99 EUROPE £9.25 – R. of W. £10.00**
**DISC:- UK £11.99 – EUROPE £13.25 – R. of W. £14.00**

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# THE LOOK

## A new series on graphics by Pat McDonald

*'When I run the screen dump program by William Weir in AA35', read the letter, 'why do I get* `Syntax Error` *in line* `90`*?'*

This gentleman was not the only one to have trouble with this listing. And the problems arose not because the program didn't work, but because he didn't understand what it did. He was trying to load in another program to load a screen, rather than relying on the printer dump itself doing the job.

This suggests that there are others who don't fully understand graphics on the Amstrad. And that's hardly surprising. So welcome to a new series that aims to take you right from square one. You don't need any previous computing experience to follow it – but if you aren't a beginner there should be plenty here for you too.

### Square one

Your screen consists of an area you can write on and alter, via your keyboard, surrounded by a border that you cannot write on. You can, however, change the border's colour. The area within the border is generally referred to as the **paper area**. On this area the smallest dot (or **pixel**, meaning **picture element**) varies according to how many colours you have. In loud, raucous **mode 0**, for instance, up to 16 colours are available. However, the pixels are very big – the paper area can be thought of as a grid of 160 pixels across by 200 deep.

Compare this with the compromise **mode 1**, the graphics mode the computer is in when you turn it on. It can have four different colours visible at the same time but the grid – or resolution – is finer, comprising 320 across by 200 deep.

When you need high resolution (wordprocessors and spreadsheets spring to mind) **mode 2** is the best. With only two colours to play with you're limited in what you can do, but the horizontal resolution has doubled again to 640 pixels by 200.

It's interesting to compare these different screen modes by typing `MODE 0`, viewing the `Ready` message, then typing `MODE 1` and viewing etc. Notice how the CPC characters consist of the same pixel shapes, but because of the different resolution the characters are distorted in different modes.

In mode 0 the pixels are rectangles lying on their sides, in mode 1 they are roughly square and in mode 2 they're rectangles again, this time standing up.

Note how characters, even if supposedly of different sizes, also follow a grid. This consists of 20 characters across for mode 0, 40 for mode 1 and 80 for mode 2. Not too hard to grasp, is it?

### Zoom in

Let's take a closer look at colours. A pixel on an Amstrad screen can be any one of 27 different colours, but the screen mode determines just how many can be used on the screen at once. This range of colours is called the **palette**, and its relationship to the screen is a trickier concept to grasp.






● Mode 0 – pretty but coarse resolution; and mode 1: fewer colours, higher class

The screen mode has a set number of **ink pens**, into which can go various colours selected from the palette. And then pixels can be set using the inks.

Simple eh? Well, it's round about here things get a little more complicated, because one of the inks is generally referred to as the **paper colour**. This is **ink number 0**, and is used as a background for graphics. Most of the time, that is.

To demonstrate, reset your Amstrad and type the following: `INK 0,9`. This sets the paper colour – ink number 0 – to green. (For a full list of colour numbers refer, e.g., to **Chapter 1, page 48, 6128 manual**.) But it does this for everything already drawn in the background ink – which is most of the screen – instantly. All ink changes are done at a similar speed.

Coming soon: a gallery of your artwork. If you've drawn any graphics on a CPC, send us a tape or disk. Don't forget to enclose an SAE if you want it back, and post it to: *The Look, Amstrad Action*, 4 Queen St, Bath, Avon BA1 1EJ.

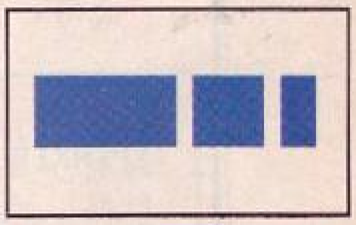
### A different viewpoint

From the Amstrad's viewpoint, however, everything is different. All it sees is a block of its memory – from 49152 to 65535. If a zero is placed in all of these memory locations, then the whole screen is put to pen/ink 0, i.e. the paper colour.

(Incidentally, the way to use the *Printer Dump* program mentioned above is to save the screen as a binary file when it's actually being displayed. The syntax is:
`SAVE "filename",b,49152,16384`.
The dump routine now loads back this binary file into the screen, and prints a copy.)

What happens when different numbers are placed in the graphics memory? This is essentially what the `PRINT`, `DRAW` and `PLOT` commands do. More of them next month: for now let's stick with the computer's perspective.

Type in `CLS` to clear the screen, and try typing the following: `POKE 49192,n` where `n` is a number from 0 to 255. This changes a particular memory location that corresponds with the top-middle of the screen.



● Mode 0, Mode 1 and Mode 2 pixels

The computer notices the changes to the screen memory, and changes some of the pixels to different ink combinations.

Now type `MODE 2` and repeat the above pokes. Lovers of binary (but what you do in your private life is your own affair) will spot the system automatically.

To compare the number with the pixel formation, do the poke and then type: `PRINT BIN$(n)`. This gives you a binary (noughts and ones) representation of the number.

Try using `MODE1` and `MODE 0`. It's not so straightforward this time, is it?

Catch next month's *Look* for an explanation.

# SOLDERING ON

## Stereo for your CPC!

We know how valiantly our Amstrads attempt to entertain us with their efforts at sound. We all wish, secretly, it was a little better. The puny loudspeaker on the machines doesn't help – it's a commonly known fact that small speakers don't reproduce bass sounds at all well.

Just putting the standard mono sound through a bigger speaker isn't the best solution, however. The way to go is to take the stereo output from an Amstrad, amplify it and send it to two different speakers. This results in a much richer sound.

There are commercial equivalents of such a device (the £30 Siren Software *Soundblaster* springs to mind – see *AA23*) but they cost an awful lot. So here's a project that lets you appreciate CPC sound as opposed to cursing it.

## Preparation

The component layout shown is for **Verostrip**, which has pre-cut tracks. You may, of course, use any Veroboard you have on hand. In which case you should be knowledgable enough to do your own layout from the circuit diagram provided.

a)

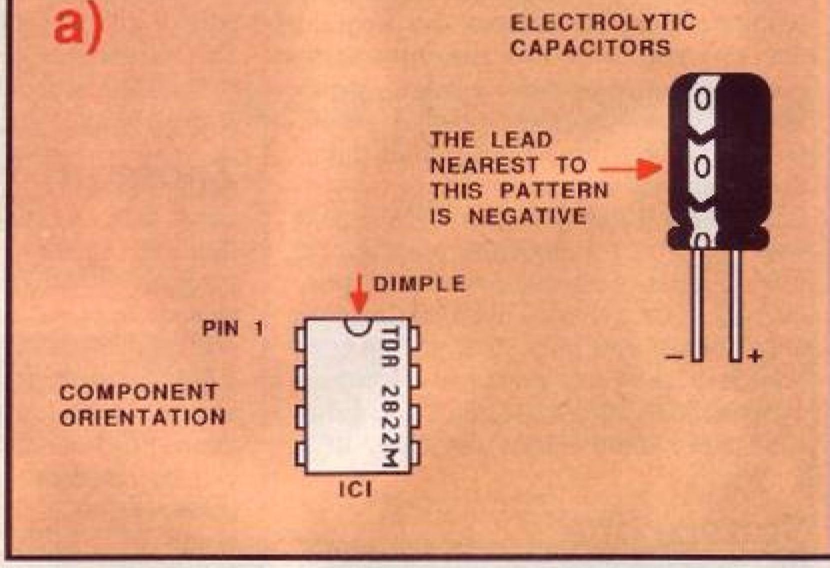
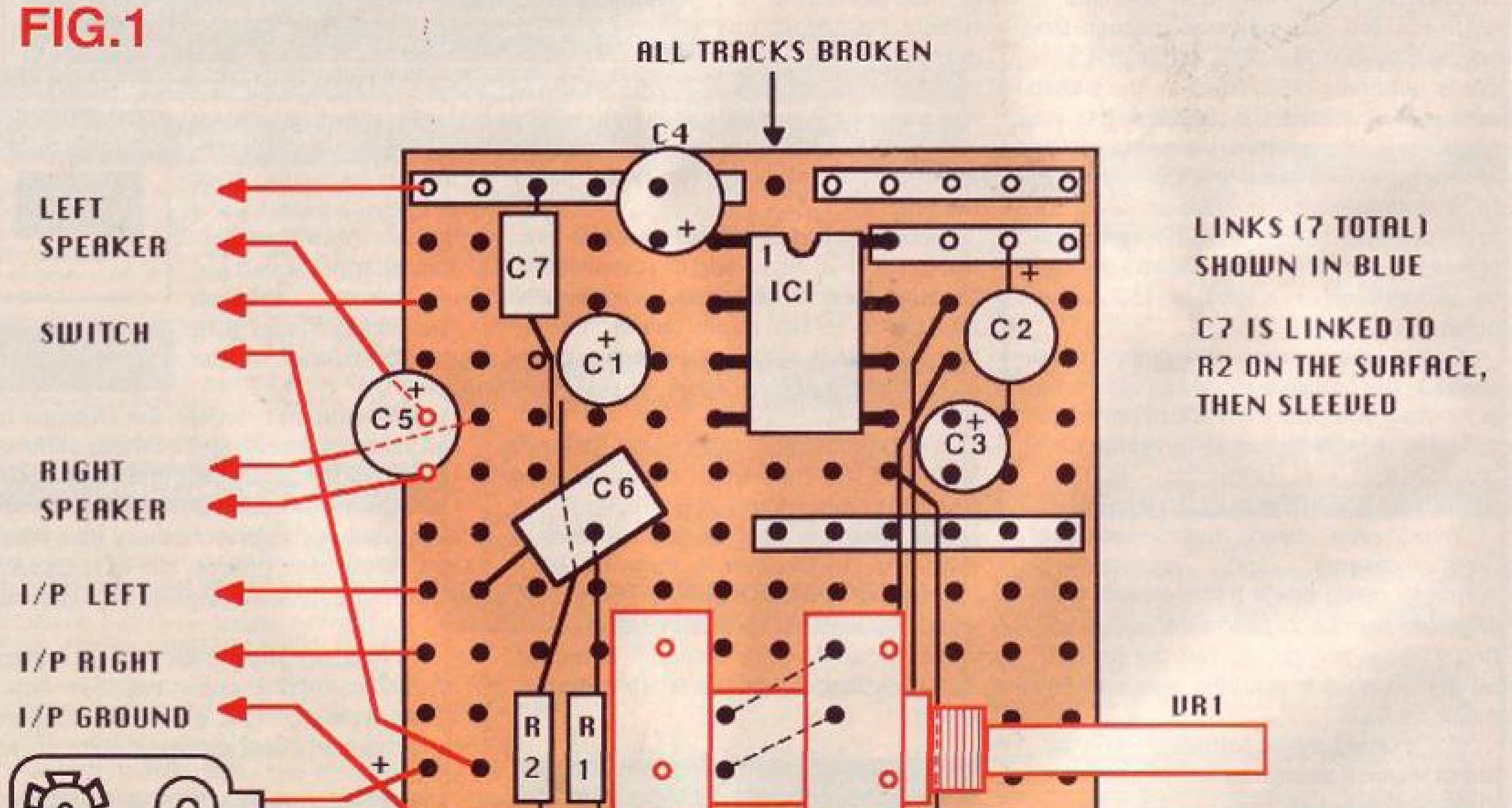


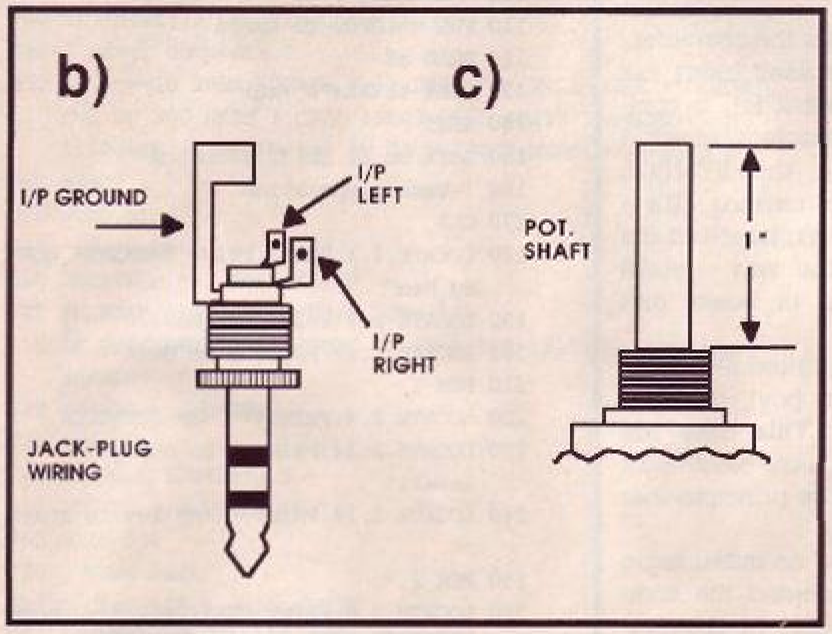

FIG.1



## Any more for any more?

**Have you a project? We prefer small, easy to build – and cheap! – designs but we consider everything. And we pay too;between £40-£60, according to quality and presentation.**

**It's a good idea to include full diagrams. Our skilled and dedicated art staff *(snigger snigger)* redraw these, so don't worry if it isn't a work of art – just make it clear and easy to understand. Send your Fairlight emulator to: *Hardware Projects, Amstrad Action,* 4 Queen St, Bath BA1 1EJ**




The Verostrip must have all of its tracks cut. The direction of the cut must be across the tracks in the middle of the board. To break tracks, either use a drill bit with some tape on it, or cut using a sharp blade. The first method is preferable as short circuits are less likely.

## Construction

First, solder the plain wire links in place (seven in total) as in **figure 1** Cut the potentiometer shaft to a little over the right length – too short and the knob won't fit on it. Insert it into the position shown. You may need to enlarge the pot mounting holes slightly. Once you have a fit, solder it. Take your time over the potentiometer: the fit is quite important, because it's a moving part.

Now solder the resistors and capacitors into the board, ensuring that those capacitors marked with a plus (+) are installed the right way round. (Resistors are not so fussy.) Finally, solder the integrated circuit chip into place, again ensuring that it is the correct way round: look for the slot or dimple on the chip.

Next, solder the battery lead, the speaker leads and the input lead into place. Put the stereo jack plug onto the end of the input lead. Before final assembly of the case, you had better test the circuit.

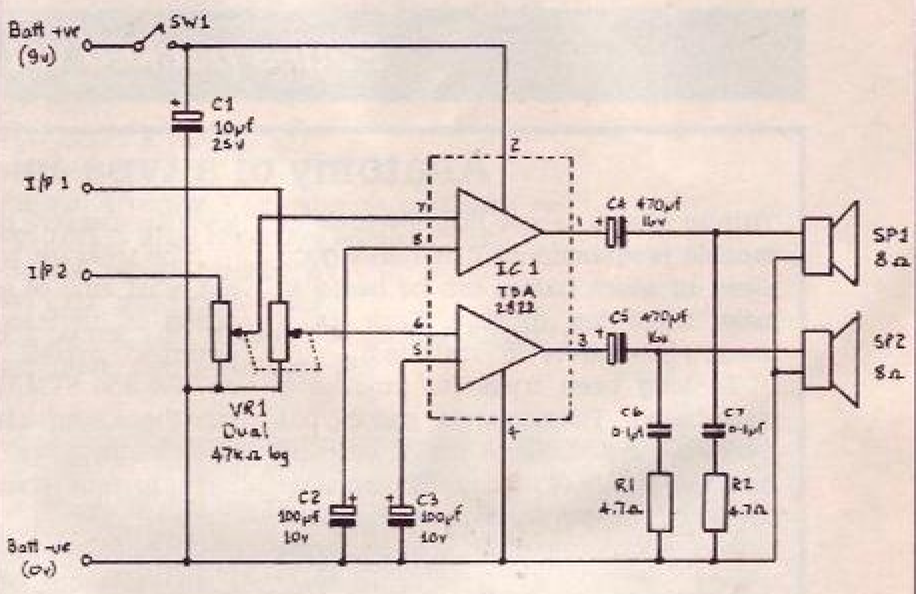
## Test it, use it

Solder a link where the on/off switch is to be wired. Plug in the battery, and glorious stereo should come forth. It's amazing the difference this can make on games such as *Glider Rider*, *Uridium* and *ATF*, not to mention the *Advanced Music System* – oh, OK then, and the *Advanced Music System*.

## Tidying up

Drill the case as in **figure 4**. Take some time over this, as it affects the final look of the project. Fit the switch into the case and solder the switch leads (not forgetting to remove the temporary link). You can mount the circuit board and battery using sticky pads. The shaft needs to protrude from the case by about

**FIG.2**




5/16", so trim it until it's right. At this point you need to unsolder the speaker temporarily and input leads, in order to push them through the holes. Assemble the case, fit the knob, and get out those games with the best sound FX.

## Component List

| Ref | Description | Maplin Code | Unit Cost |
|---|---|---|---|
| R1,2 | 2 X 4.7 Ohm Resistors | M 4R7 | £0.12 |
| VR1 | Dual pot., log. 47K Ohms | FX 11 M | £1.60 |
| C1 | elect. cap. 10uF 25V | FF 04 E | £0.08 |
| C2,3 | 2 X elect. cap 100uF 10V | FF 10 L | £0.08 |
| C4,5 | 2 X elect. cap. 470uF 16V | FF 15 R | £0.25 |
| C6,7 | 2 X poly cap 0.1uF | WW 41 U | £0.15 |
| IC1 | TDA 2822 stereo amplifier | UJ 38 R | £1.50 |

**Hardware**

| | | | |
|---|---|---|---|
| SW1 | Switch SPST | YX 64 U | £0.98 |
| | Stereo Jack Plug 3.5mm | HF 98 G | £0.28 |
| | PP3 Battery connector | HF 28 F | £0.12 |
| | Knob | FE 14 Q | £0.28 |
| | Case | LH 14 Q | £0.98 |
| | Verostrip | FL 17 T | £1.80 |
| SP1,2 | 2 X Loudspeakers | YJ 16 S | £2.50 |

**Abbreviations:**

pot. = potentiometer, log. = logarithmic, elect. = electrolytic, cap. = capacitor, poly. = polyester, uF = micro farads, SPST = single pole single travel.

If you already posess some speakers (any 8 Ohm impedance speakers will work) and some Verostrip, then the total cost is just over seven pounds.

Take note that the unit cost prices are not totally inclusive, so expect to pay more than we list here. Contact: ☎ 0702 554 155, Maplin Electronics Ltd, PO Box 3, Rayleigh, Essex, SS6 8LR.

# TYPE-INS

**Pages packed with powerful programs**

## Anatomy of a type-in

'Writing games is not just a matter of capable programming: it requires good ideas on which games can be based to make them fun to play. Each game needs a good 'story" to illustrate it.

'I'd long been trying to produce a maze-based, Pacman-style game, but couldn't solve the problem of collision detection (i.e. how to stop my controlled character walking through maze walls). Then I spotted a short machine-code routine by RpM *(that's Richard Monteiro, of sainted memory, and it was in AA22 -ed.).* This identified characters printed on the screen. I was away!

'I incorporated RpM's code, using it to stop the characters falling through barriers and to detect collisions between the character and spikes or gems. Using the INKEY command to detect key presses and joystick movement I gave the player control, positioning the character with the LOCATE command.

'As the computer scans the keyboard fifty times every second to see whether a key is being pressed, each key has two states: pressed and not pressed, represented by 0 and -1 respectively. Each key also has a number identifying it.

'So INKEY (47)=0 THEN... to the computer means, 'If key number 47 (space bar) is being pressed then...'

'The character's position is determined by two variables, x and y. In response to the player's control the character can be deleted, its co-ordinates (x and y) changed, and the character reprinted in a new location. For instance, LOCATE x,y:?" " deletes the character; x=x+1 changes its position (in this case, moves it right); LOCATE x,y:? <character> reprints the character.

'The treasure hunter itself (don't ask me what kind of a beast it is!) is composed of graphics characters which I designed myself using the SYMBOL AFTER and SYMBOL commands. (It's a pity these aren't clearly explained in the User Instructions, by the way – you'll have to look them up in books and mags.)

'The characters are printed alternately in the same location (x,y), giving a near animation effect. This uses the NOT command (based on the electronics not-gate), working on the principle that NOT 1=0) and NOT 0=-1.

'I gave the variable 'a' an initial value of 0 (line 310), and included the command a=NOT a (line 660) in the program. The value of 'a' alternates between 0 and -1, and the character printed depends on these values (lines 510 and 520).

'I added some sound commands to produce short notes as the character falls or rises, the tone depending on the position of the character (variable y).

'Then I added colour using then INK, PEN and BORDER commands, all of which are well explained in the User Instructions. I had to exercise great care over my choice of colours since I was working with a green screen monitor.

'Hope you enjoy playing *Treasure Hunt* as much as I did writing it!'

**Benedict Garrett, 16, is a sixth former at Launceston College, Cornwall, studying A level maths, physics and chemistry. He hopes to study computer science at university.**

## Oops!

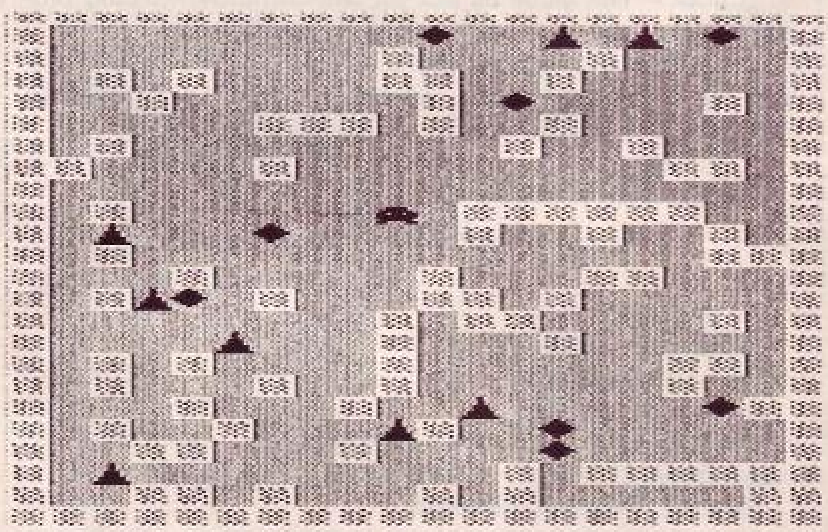
It was the heat... there was a power-cut... the office was off sick... the editor had a brainstorm... Pleeease! You've got to believe us.

That's right, we're talking about last month's spectacular boo-boo. Brilliant as it was, we had no intention of printing **W.R.Street's** 'Personal Spending' program twice (and no, **W.R.Street**, you don't get paid twice!). That also meant that **Ben Garrett's** 'Treasure Hunt' got cut off in its prime. So to make amends we're printing it again – but this time in full (we hope!).

## Treasure Hunt

```
1 'Treasure Hunt
2 'By Benedict Garrett
3 'Amstrad Action September 1988
10 ' Variables, inks, graphics.
20 MODE 0:sc=0:lev=1:scr=0
30 INK 0,11:BORDER 11
40 INK 1,24:INK 2,6:INK 3,0:INK 4,15,3
50 RANDOMIZE TIME:SYMBOL AFTER 250
60 SYMBOL 250,255,171,213,171,213,171,
   213,255
70 SYMBOL 251,8,8,8,28,28,62,62,127
80 SYMBOL 252,60,126,219,255,129,195,
   126,195
90 SYMBOL 253,0,0,60,126,219,255,126,195
100 ' Machine code ( Thanks RpM ).
110 FOR t=&BF00 TO &BF06
120 READ a$
130 POKE t,VAL("&"+a$)
140 NEXT
150 DATA cd,60,bb,32,07,bf,c9
160 ' Game preparation
170 CLS
180 LOCATE 1,1:PEN 3:PRINT"TREASURE HUNT
    By Ben"
190 LOCATE 1,2:PRINT STRING$(20,"=")
200 LOCATE 5,12:PRINT"Q to Quit"
210 PEN 1
220 LOCATE 2,4:PRINT"** USE JOYSTICK **"
230 LOCATE 2,14:PRINT"L to change
    level."
240 LOCATE 1,24:PRINT"< Any key to start
    >"
250 PEN 2
260 LOCATE 3,6:PRINT CHR$(240);"....move
    up."
270 LOCATE 3,8:PRINT CHR$(242);"....move
    left."
280 LOCATE 3,10:PRINT CHR$(243);
    "....move right."
290 PEN 1:LOCATE 6,20:PRINT"Level :"lev
300 PEN 3:LOCATE 7,22:PRINT"Score"scr
310 x=2:y=2:a=0
320 CALL &BB03:CALL &BB18
330 IF INKEY(67)=0 THEN PEN 1:MODE
    2:LIST
340 IF INKEY(36)=0 AND lev=1 THEN PEN
    3:LOCATE 5,17:INPUT "Level:",lev:
    GOTO 350 ELSE 360
350 IF lev<1 OR lev>30 THEN lev=1:GOTO
    170
360 CLS:PEN 1:FOR f=1 TO 20
370 LOCATE f,1:PRINT CHR$(250)
380 LOCATE f,24:PRINT CHR$(250)
390 NEXT
400 FOR f=1 TO 24
410 LOCATE 1,f:PRINT CHR$(250)
420 LOCATE 20,f:PRINT CHR$(250)
430 NEXT
440 FOR f=1 TO 90+(5*lev)
450 LOCATEINT(RND(1)*18+2),
    INT(RND(1)*22+3):PEN 1:PRINT
    CHR$(250):NEXT
460 FOR f=1 TO 5+5*lev:LOCATE
    INT(RND(1)*17+3),INT(RND(1)
    *21+2):PEN 3:PRINT CHR$(251):NEXT
470 PEN 4:FOR f=1 TO 10
480 LOCATE INT(RND(1)*17+3)
    ,INT(RND(1)*21+2):CALL &BF00:
    IF PEEK(&BF07)=227 THEN 480 ELSE
    PRINT CHR$(227)
490 NEXT
500 ' Game start
510 IF a=0 THEN a$=CHR$(252)
520 IF a=-1 THEN a$=CHR$(253)
```

```
530 PEN 2:LOCATE x,y:PRINT a$
540 LOCATE x,y+1:CALL &BF00
550 IF PEEK(&BF07)=227 THEN SOUND 1,300,10,7:sc=sc+1:scr
    =scr+lev
560 IF PEEK(&BF07)<>250 AND INKEY(72)<>0 THEN LOCATE x,y:
    PRINT" ":y=y+1:LOCATE x,y:SOUND 2,500+25*y,5,7:PRINT a$
570 LOCATE x,y+1:CALL &BF00
580 ' Player dead ?
590 IF PEEK(&BF07)=251 THEN 930
600 IF INKEY(72)=0 OR INKEY(76)=0 THEN GOTO 690
610 IF INKEY(67)=0 THEN 930
620 IF INKEY(74)=0 THEN GOTO 780
630 IF INKEY(75)=0 THEN GOTO 860
640 ' Level complete ?
650 IF sc>=10 THEN LOCATE 3,12:PRINT"** WELL DONE **":FOR
    f=1 TO 300:NEXT f:CALL &BB03:CALL &BB18:lev=lev
    1:LOCATE 1,24:FOR f=1 TO 30:PRINT"":NEXT:sc=0:GOTO 290
660 a=NOT a
670 GOTO 510
680 ' Move up
690 LOCATE x,y-1:CALL &BF00
700 IF PEEK(&BF07)=250 THEN GOTO 530
710 IF PEEK(&BF07)=227 THEN SOUND 1,300,10,7:sc=sc+1:scr=
    scr+lev
720 LOCATE x,y:PRINT" "
730 y=y-1
740 SOUND 2,500+25*y,5,7
750 LOCATE x,y:PRINT a$
760 GOTO 530
770 ' Move left
780 LOCATE x-1,y:CALL &BF00
790 IF PEEK(&BF07)=250 THEN GOTO 530
800 IF PEEK(&BF07)=227 THEN SOUND 1,300,10,7:sc=sc+1:scr
    =scr+lev
810 LOCATE x,y:PRINT" "
820 x=x-1
830 LOCATE x,y:PRINT a$
840 GOTO 530
850 ' Move right
860 LOCATE x+1,y:CALL &BF00
870 IF PEEK(&BF07)=250 THEN GOTO 530
880 IF PEEK(&BF07)=227 THEN SOUND 1,300,10,7:sc=sc+1:scr
    =scr+lev
890 LOCATE x,y:PRINT" "
900 x=x+1
910 LOCATE x,y:PRINT a$
920 GOTO 530
930 PEN 3:LOCATE 3,12:PRINT"** GAME OVER **"
940 LOCATE 3,14:PRINT"You scored.."scr
950 FOR f=1 TO 300:NEXT f
960 CALL &BB03:CALL &BB18
970 LOCATE 1,24:FOR f=1 TO 30:PRINT"":NEXT
980 lev=1:sc=0:scr=0:GOTO 170
```



## Magic

'Magic' sets up an RSX command that can be used to replace any particular data byte in screen memory with a different byte. This can be used to create some novel effects on graphic screens.

It has been written (like the real time clock) by **Simon Payne** who lives in Blackpool.

```
1 'Magic
2 'By Simon Payne
3 'Amstrad Action October 1988
10 LN=100
20 FOR ADR=&A000 TO &A030 STEP 13
30 READ BYTE$:CHK=0
40 FOR I=0 TO 12
50 V=VAL("&"+MID$(BYTE$,I*2+1,2))
60 POKE ADR+I,V:CHK=CHK+V
70 NEXT
80 IF CHK<>VAL("&"+RIGHT$(BYTE$,3)) THEN PRINT "ERROR
   IN LINE :";LN:STOP
90 LN=LN+10:NEXT
100 DATA 2109A0010DA0CDD1BC000000003D2
110 DATA 12A0C318A04D414749C300210042F
120 DATA C0DD5600DD5E027BBECC2CA023624
130 DATA 7DB4C818F57A77C900000000004C0
140 CALL &A000,0,0
150 MODE 1
160 PRINT "Magic Paint now active"
170 PRINT:PRINT
180 PRINT "  eg.  |MAGIC,0,103":PRINT
190 PRINT "This will search the screen for the byte0
    and change it to 103"
200 PRINT "GO ON TRY IT"
210 PRINT
220 PRINT "|MAGIC,OLD BYTE,NEW BYTE"
```

**Program Notes**

This program is a little out of the ordinary, because it was written after the author had seen an Archimedes Art program which had a similar feature.

Lines **10-90** read in the data stored in lines **100-130**, and poke this data into memory. Line **140** then runs through this code, which makes ready the new command.

### *Here, have some money!*

Send us your listings and not only do you stand a very good chance of getting in print in your favourite magazine, you could also earn yourself **£100**. Every *Type-In* we publish is paid for, and **£10** is the absolute minimum. So what are you waiting for? Send your tape or disk – and a printout if you can – to ***Type-Ins, Amstrad Action*, Future Publishing Ltd, 4 Queen St, Bath, BA1 1EJ.** And here's a few tips you may find useful:

- Send only your own original unpublished work;
- Use lower-case, not capitals, for variable names;
- REM statements make the program easier to understand;
- Don't use letters that look like numbers as variable names (O and 0, for instance, or l and 1);
- Avoid lengthy multi-statements. Short lines aid debugging;
- And ensure your name and address are on *every* piece of paper, cassette and disk you send.
- If you'd like to reach an even larger audience, declare that you are putting your contribution into the Public Domain.

Oh, and one final thing. Good luck!

## Multi Prog

For all those 464 owners who are annoyed at continually being ignored by *Type-Ins* contributors – this is for you. It's a fairly complex program that allows the storing of up to nine short Basic programs at once. The program sets up 5 RSX's:

**|INIT,n,add** – Each program is referred to by number. When first run *Multi Prog* is looking at &170, the regular start of Basic slot, and all of the other slots are uninitialized. This routine initializes program space at address **add** for program number **n**. Make sure programs don't overlap, and also ensure that at least 2K is left below Himem to use the disk.

**|SELECT,n** – This makes Basic look at program **n**. There'll be nothing there at first, so **LOAD** something in the usual manner.

**|PROGS** – Displays information about each of the 9 programs, including start and end addresses and if each of them have been initialized.

**|CLEAR** – The same as **NEW** for the currently selected program. Do not use **NEW** itself! This is very important.

**|DELETE,n** – Clears program **n** and returns it to an uninitialized state. So then you can redefine it. NB you can't **|DELETE** the currently selected program, only a different one.

It might be stating the obvious, but don't use any of these commands from within a Basic program.

```
1 'Multi Prog
2 'By J Longley
3 'Amstrad Action October 1988
10 MEMORY &8FFF:add=&9000
20 FOR f=100 TO 750 STEP 10
30 chk=0:FOR g=1 TO 16
40 READ a$:a=VAL("&"+a$)
50 POKE add,a:add=add+1:chk=chk+a
60 NEXT
70 READ b$:IF chk<>VAL("&"+b$) THEN PRINT "Error in line "
   ;f:END
80 NEXT
90 CALL &9000:PRINT "Multi-Prog now active"
100 DATA 21,81,AE,11,3F,91,01,0A,00,ED,B0,01,18,90,21,14,4B7
110 DATA 90,C3,D1,BC,BD,A3,18,90,29,90,C3,44,90,C3,2D,93,8BB
120 DATA C3,9D,91,C3,7D,93,C3,3F,92,49,4E,49,D4,43,4C,45,7E0
130 DATA 41,D2,53,45,4C,45,43,D4,44,45,4C,45,54,C5,50,52,628
140 DATA 4F,47,D3,00,FE,02,21,D3,90,C2,2C,91,DD,7E,02,21,6EA
150 DATA 1F,91,FE,00,CA,2C,91,FE,0A,D2,2C,91,4F,06,00,21,642
160 DATA 35,91,09,7E,FE,01,36,01,21,E3,90,CA,2C,91,3A,9A,672
170 DATA 91,47,AF,C6,0A,10,FC,4F,06,00,21,35,91,09,EB,21,5B4
180 DATA 81,AE,01,0A,00,ED,B0,DD,7E,02,32,9A,91,DD,6E,00,6DC
190 DATA DD,66,01,2B,22,81,AE,23,23,23,22,83,AE,22,85,AE,5D1
200 DATA 22,87,AE,22,89,AE,DD,7E,02,47,AF,C6,0A,10,FC,4F,72E
210 DATA 06,00,21,35,91,09,EB,21,81,AE,01,0A,00,ED,B0,21,4FA
220 DATA FF,90,CD,2C,91,DD,7E,02,C6,30,CD,5A,BB,21,0F,91,80F
230 DATA C3,2C,91,50,61,72,61,6D,65,74,65,72,20,45,72,72,66A
240 DATA 6F,72,00,50,72,6F,67,72,61,6D,20,61,6C,72,65,61,5DE
250 DATA 64,79,20,69,6E,69,74,69,61,6C,69,7A,65,64,00,50,5E3
260 DATA 72,6F,67,72,61,6D,20,6E,75,6D,62,65,72,20,00,20,571
270 DATA 69,6E,69,74,69,61,6C,69,7A,65,64,20,4F,4B,00,4F,59F
280 DATA 75,74,20,6F,66,20,72,61,6E,67,65,00,7E,CD,5A,BB,66B
290 DATA B7,C8,23,C3,2C,91,01,00,00,00,00,00,00,00,00,00,323
300 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,0
310 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,0
320 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,0
330 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,0
340 DATA 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,0
350 DATA 00,00,00,00,00,00,00,00,01,01,01,00,FE,01,21,123
360 DATA D3,90,C2,2C,91,DD,7E,00,21,1F,91,FE,00,CA,2C,91,793
370 DATA FE,0A,D2,2C,91,4F,06,00,21,35,91,09,7E,21,27,92,534
380 DATA FE,01,C2,2C,91,3A,9A,91,47,AF,C6,0A,10,FC,21,35,70B
390 DATA 91,4F,06,00,09,11,81,AE,EB,01,0A,00,ED,B0,DD,7E,61D
400 DATA 00,47,AF,C6,0A,10,FC,21,35,91,4F,06,00,09,11,81,4A9
410 DATA AE,01,0A,00,ED,B0,DD,7E,00,32,9A,91,21,10,92,CD,69E
420 DATA 2C,91,DD,7E,00,C6,30,CD,5A,BB,21,19,92,C3,2C,91,73C
430 DATA 50,72,6F,67,72,61,6D,20,00,20,6E,6F,77,20,73,65,564
440 DATA 6C,65,63,74,65,64,00,50,72,6F,67,72,61,6D,20,6E,5D7
450 DATA 6F,74,20,69,6E,69,74,69,61,6C,69,7A,65,64,00,3A,5D3
460 DATA 9A,91,DD,21,9B,91,DD,77,00,3E,15,CD,5A,BB,3E,01,71D
470 DATA CD,9D,91,3E,06,CD,5A,BB,3E,01,F5,21,EF,92,CD,2C,7F0
480 DATA 91,F1,F5,C6,30,CD,5A,BB,21,FA,92,CD,2C,91,F1,F5,A6C
490 DATA 4F,06,00,21,35,91,09,7E,FE,01,20,3B,21,FE,92,CD,59B
500 DATA 2C,91,F1,F5,47,AF,C6,0A,10,FC,21,35,91,4F,06,00,6B1
510 DATA 09,EB,1A,6F,13,1A,67,23,CD,CC,92,21,08,93,CD,2C,614
520 DATA 91,13,13,13,13,13,13,13,1A,6F,13,1A,67,CD,CC,92,45E
530 DATA F1,3C,FE,0A,20,A4,C9,21,13,93,CD,2C,91,F1,F5,C6,8BF
540 DATA 30,CD,5A,BB,21,1C,93,CD,2C,91,18,E4,7C,CD,D5,92,818
550 DATA 7D,CD,D5,92,C9,F5,0F,0F,0F,0F,CD,DE,92,F1,CD,E5,98B
560 DATA 92,CD,5A,BB,C9,E6,0F,C6,30,FE,3A,D8,C6,07,C9,0D,8DB
570 DATA 0A,50,72,6F,67,72,61,6D,20,00,20,3A,20,00,53,74,443
580 DATA 61,72,74,20,3A,20,26,00,20,20,20,45,6E,64,20,3A,3B8
590 DATA 20,26,00,50,72,6F,67,72,61,6D,20,00,20,6E,6F,74,4AF
600 DATA 20,69,6E,69,74,69,61,6C,69,7A,65,64,00,2A,89,AE,617
610 DATA EB,2A,81,AE,E5,23,36,00,23,7C,BA,20,F9,7D,BB,20,74C
620 DATA F5,E1,22,81,AE,23,23,23,22,83,AE,22,85,AE,22,87,6E1
630 DATA AE,22,89,AE,21,68,93,CD,2C,91,3A,9A,91,C6,30,CD,7D5
640 DATA 5A,BB,21,71,93,C3,2C,91,50,72,6F,67,72,61,6D,20,6B2
650 DATA 00,20,63,6C,65,61,72,65,64,20,4F,4B,00,FE,01,21,4CA
660 DATA D3,90,C2,2C,91,DD,7E,00,21,9A,91,BE,21,FD,93,CA,8C2
670 DATA 2C,91,F5,21,1F,91,FE,00,CA,2C,91,FE,0A,D2,2C,91,79F
680 DATA 4F,06,00,21,35,91,09,7E,21,27,92,FE,01,C2,2C,91,51B
690 DATA 3E,15,CD,5A,BB,3A,9A,91,F5,DD,77,00,CD,C5,91,CD,8D3
700 DATA 2D,93,F1,CD,C5,91,F1,F5,4F,06,00,21,35,91,09,36,735
710 DATA 00,3E,06,CD,5A,BB,21,E8,93,CD,2C,91,F1,C6,30,CD,800
720 DATA 5A,BB,21,F1,93,C3,2C,91,50,72,6F,67,72,61,6D,20,732
730 DATA 00,20,64,65,6C,65,74,65,64,20,4F,4B,00,43,61,6E,4C3
740 DATA 6E,6F,74,20,64,65,6C,65,74,65,20,63,75,72,72,65,625
750 DATA 6E,74,20,70,72,6F,67,72,61,6D,00,00,00,00,00,00,3FA
```

**Program Notes**

It's a fairly conventional machine code loader. At line **10** memory is reserved. Lines **20-60** read the data in and poke it into memory. Lines **70** and **80** check that you have entered the data correctly, and line **90** runs the machine code, installing *Multi Prog*.

## Real Time Clock

We've had no shortage of programs that turn the CPC into a clock. This one from **Simon Payne** – resident in Blackpool – is a bit special though, because it creates a clock that doesn't get in the way, letting your computer get on with life. When you want to see what the time is, just press the **ENTER** key. (That's the small **ENTER** key on 464's.)

```
10 REM Real Time Clock (RTC)
20 REM By Simon Payne
30 REM Amstrad Action October 1988
40 REM SECONDS ARE STORED AT &9C40
50 REM MINUTES ARE STORED AT &9C41
60 REM HOURS ARE STORED AT &9C42
70 MODE 1
80 LN=180
90 FOR ADR=&8000 TO &809F STEP 13
100 READ BYTE$:CHK=0
110 FOR I=0 TO 12
120 V=VAL("&"+MID$(BYTE$,I*2+1,2))
130 POKE ADR+I,V:CHK=CHK+V
140 NEXT
150 LOCATE 10,10:PRINT "CHECKING LINE ";LN
160 IF CHK<>VAL("&"+RIGHT$(BYTE$,3)) THEN PRINT
    "ERROR IN LINE :";LN:STOP
170 LN=LN+10:NEXT
180 DATA 21A2800681111D80C3EFBC219C5A3
190 DATA 80113200013200C3E9BC219C8049B
```

```
200 DATA C3ECBC3A409C3CFE3CCC2D80326A2
210 DATA 409CCD5680C93A419C3CFE3CCC6A1
220 DATA 3F8032419C3E0032409CC93A4245F
230 DATA 9C3CFE18CC000032429C3E003243A
240 DATA 419C3E07CD5ABBC93E06CD1EBB5B7
250 DATA C83A429CCD83803E3ACD5ABB3A644
260 DATA 419CCD83803E3ACD5ABB3A409C61D
270 DATA CD83803E07CD5ABB3E0DCD5ABB624
280 DATA C9160ACD8A8016010E009238033B2
290 DATA 0C18FA82F579C630CD5ABBF1C97A0
300 DATA 00000000000000000000000000000
310 CALL &8000:CALL &800B
320 MODE 1:INPUT "ENTER HOUR ";H:POKE 40002,H
330 INPUT "ENTER MIN ";H:POKE 40001,H
340 INPUT "ENTER SEC ";H:POKE 40000,H
350 MODE 1:PRINT "TIME SET. PRESS THE SMALL ENTER KEY TO
SEE THE TIME"
```

**Program Notes**
Lines 70-170 perform the data reading and error checking on the data. This data is stored in lines 180-300, and it's the clock program itself written in machine code. Line 310 runs this machine code, setting up the clock, and lines 320-340 are used to input the start time.

Finally, line 350 prints up the minimal instructions on usage.

## Trapper

Yes, it's another version of the classic bike game of *Tron*. Two players each guide a different coloured track around the screen. They have to try and crash the other player into a bike trail.

**J Fox-Geen** wrote this program. Player one uses **z** and **x** to turn left and right, player two uses < and >.

```
10 REM Trapper
20 REM By J.Fox-Geen
30 REM Amstrad Action 1988
40 MODE 1:BORDER 0:INK 0,0:INK 1,24:INK 2,6
50 DRAW 0,365,1:DRAW 635,365:DRAW 635,0:DRAW 0,0
60 d1%=2:d2%=4:x1%=20:y1%=20:x2%=620:y2%=20
70 LOCATE 17,1:PRINT "Trapper    by J.Fox-Geen"
80 LOCATE 17,2:PRINT "-------"
90 PLOT x1%,y1%,1:PLOT x2%,y2%,2:i$=INKEY$
100 IF i$="z" THEN d1%=d1%-1
110 IF i$="x" THEN d1%=d1%+1
120 IF i$="," THEN d2%=d2%-1
130 IF i$="." THEN d2%=d2%+1
140 IF d1%=0 THEN d1%=4
150 IF d1%=5 THEN d1%=1
160 IF d2%=0 THEN d2%=4
170 IF d2%=5 THEN d2%=1
180 IF d1%=1 THEN y1%=y1%+2
190 IF d1%=2 THEN x1%=x1%+2
200 IF d1%=3 THEN y1%=y1%-2
210 IF d1%=4 THEN x1%=x1%-2
220 IF d2%=1 THEN y2%=y2%+2
230 IF d2%=2 THEN x2%=x2%+2
240 IF d2%=3 THEN y2%=y2%-2
250 IF d2%=4 THEN x2%=x2%-2
260 IF TEST(x1%,y1%)<>0 THEN GOTO 280
265 IF TEST(x2%,y2%)<>0 THEN GOTO 285
270 GOTO 90
280 a$="Player 1 CRASHED !!!":GOTO 290
285 a$="Player 2 CRASHED !!!"
290 LOCATE 11,7:PRINT a$:LOCATE 7,24:PRINT "Press any
    key to play again":FOR n=0 TO 100:NEXT:CALL
    &BB18:RUN
```

**Program Notes**
Lines 40-80 get the screen up and running, lines 90-270 run the game, and the final few bits announce the winner. A fair example of a tightly written game – but notice the huge amounts of statements to work out the new coordinates from 100-250.

## New Character Sets

**Paul Waterman**, whose abode is in Southampton, has sat down and reworked an old *Type-In* into a whole new form, ie using machine code. This has improved it no end at all.

So if you want to use italic, under lined and double height on your Amstrad, start typing! Characters 128-255 are reserved, so you can't use them in your own programs.

```
5 ' New Character Sets
6 ' By Paul Waterman
7 ' Amstrad Action October 1988
10 MODE 2:MEMORY &8FFF
20 dn=120
30 add=&9000
40 READ a$:IF LEN(a$)=4 THEN GOSUB 100
50 IF a$="endofdata" THEN 80
60 POKE add,VAL("&"+a$):add=add+1:total=total+VAL("&"+a$)
70 GOTO 40
80 CALL &9000
90 PRINT CHR$(128):GOTO 320
100 IF VAL("&"+a$)<>total THEN PRINT "Error in line ";dn:
    GOTO 2
110 dn=dn+10:total=0:READ a$:PRINT "Checking line ";dn:
    RETURN
120 DATA 11,00,01,CD,AB,BB,11,20,00,21,6F,91,CD,AB,BB,DD,7E,
    00,FE,00,0823
130 DATA CA,23,90,3E,C3,32,5A,BB,21,44,90,22,5B,BB,C9,3E,CF,
    32,5A,BB,090F
140 DATA 21,00,94,22,5B,BB,C9,3E,20,CD,A5,BB,01,08,03,7E,CB,
    3F,A6,77,07F2
150 DATA 23,0B,78,B1,C2,37,90,C9,FE,7F,F2,4C,90,CF,00,94,C5,
    D5,E5,CD,0BA3
160 DATA 63,91,CB,3F,F5,DC,85,90,F1,CB,3F,F5,DC,8E,90,F1,CB,
    3F,F5,DC,0D9A
170 DATA E4,90,F1,CB,3F,F5,DC,C2,90,F1,CB,3F,F5,DC,A9,90,F1,
    CB,3F,F5,0E87
180 DATA DC,97,90,F1,CB,3F,DC,F6,90,E1,D1,C1,C9,3E,B6,32,3A,
    90,CD,2F,0C88
190 DATA 90,C9,3E,A6,32,3A,90,CD,2F,90,C9,3E,21,F5,CD,A5,BB,
    2B,3E,FF,0A77
200 DATA 77,F1,3C,FE,80,C2,99,90,C9,3E,20,F5,CD,A5,BB,06,04,
    C5,7E,CB,0B6E
210 DATA 3F,77,C1,23,10,F7,F1,3C,FE,80,C2,AB,90,C9,3E,20,CD,
    A5,BB,06,0AA3
220 DATA 61,C5,06,03,7E,CB,3F,B6,77,23,10,F8,23,23,06,03,7E,
    CB,3F,A6,078C
230 DATA 77,23,10,F8,C1,10,E6,C9,3E,20,CD,A5,BB,01,08,03,CB,
    A6,23,0B,0858
240 DATA 78,B1,C2,EC,90,C9,F5,E5,3E,C3,21,06,91,32,5A,BB,22,
    5B,BB,E1,0B23
250 DATA F1,C9,FE,80,F2,4C,90,FE,20,FA,54,91,F5,C5,D5,E5,F5,
    3E,FE,CD,0E75
260 DATA A5,BB,EB,F1,D5,CD,A5,BB,D1,06,08,7E,12,13,12,23,13,
    10,F8,21,0931
270 DATA 3B,91,7E,FE,00,CA,41,91,CD,51,91,23,C3,2E,91,FE,0A,
```

```
     08,FF,0B,0952
280 DATA 00,CD,78,BB,7C,FE,01,3E,0A,CC,51,91,E1,D1,C1,F1,C9,
     CF,00,94,0B01
290 DATA FE,0D,C2,51,91,3E,0D,CD,51,91,3E,0A,C3,51,91,F5,C5,
     D5,E5,CD,0AD7
300 DATA 00,90,E1,D1,C1,F1,C9,00,00,00,00,00,00,00,00,00,00,
     00,00,00,04BD
310 DATA endofdata
320 ' saving instructions: SAVE "PRINT.BIN",b,&9000,&170
330 ' USER GUIDE      ps You don't need the next bit
340 MODE 1:PRINT"              Brief User Guide":PRINT:PRINT:
     PRINT
350 PRINT "To use the new character sets you must  first";
     CHR$(129)" 'CALL &9000,1'";CHR$(128);" to turn them on."
360 PRINT:PRINT "  Then you must use the old ";CHR$(130);
     "PRINT CHR$(n)";CHR$(128);
370 PRINT " command to call each new character set."
380 PRINT:PRINT "Where 'n' is a number between 128 and
     255. To know what 'n' should be you     have to decide
     which bits in the number  to set."
390 LOCATE 1,25:PRINT "            Press Any key to continue"
400 CALL &BB18
410 MODE 1:PRINT "               Which Bits":PRINT:PRINT:PRINT
420 PRINT "Set the following bits in the number to get the
     required results.":PRINT
430 PRINT "Bit 7- Must always be set"
440 PRINT CHR$(192);"Bit 6- Double height"
450 PRINT CHR$(160);"Bit 5- Underlined"
460 PRINT CHR$(144);"Bit 4- Italic"
470 PRINT CHR$(136);"Bit 3- Horror"
480 PRINT CHR$(132);"Bit 2- Army"
490 PRINT CHR$(130);"Bit 1- Thin"
500 PRINT CHR$(129);"Bit 0- Thick"
510 LOCATE 1,25:PRINT CHR$(128)"            Press Any key to
     continue":CALL &BB18
520 MODE 1:PRINT"                 Mixers"
530 PRINT:PRINT:PRINT "Of course you can set more than 1
     bit inthe number and mix 2 or more stlyes."
540 PRINT:PRINT "e.g setting bits 7,6,5 and 0 gives you:"
550 PRINT "&X11100001 = 225      (PRINT CHR$(225))"
560 PRINT:PRINT:PRINT CHR$(225)"Thick Underlined Double
     height letters"
570 PRINT:PRINT:PRINT CHR$(128)"To return to normal
     characters type      'PRINT CHR$(128)' and to turn off
     completely type 'CALL &9000,0'"
```

**Program Notes**

Line 10 sets the screen mode and the memory limit. Lines 20-40 read in data that makes up the machine code. Line 50 catches the last item and makes the program continue.

Lines 60-70 complete the reading operation, looping if necessary.

Line 80 calls the machine code, which then sets up the fonts. Line 90 jumps to line 320 onwards, saving out the machine code to tape or disk and then printing the instructions.

Lines 100 and 110 perform checks on the data to make sure of the quality of your typing!

Lines 120-310 contain the machine code data itself.

# AA SMALL ADS

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This section of the magazine offers you the chance to speak directly to the huge waiting world of CPC owners — or would-be owners. Users report good results.
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# PILGRIM

**A special report on the state of CPC adventuring**

**Welcome, weary traveller! Whether thou hast been *dallying* in the Hall of the Mountain King, *tarrying* awhile with damsels fair, or simply *propping up* a wall in Lesser Codhampton, Berks, come now unto these pages with a clear heart and breathless anticipation of...**

**¶ software houses' adventure plans for 1988/9. Do they include us CPC owners?**

**¶ Ye *Clue Pot*, for those who be Stucke.**

**¶ Ye *Lords and Ladies of Adventure*, for those who be Truly Stucke and up to their Neckes in itte.**

**¶ And ye *Pilg Programming*, wherein those with grey cells have to get them workinge.**

# Software 1989 – CPC or bust?

It isn't so long ago that the Pilg did a round-up of adventure houses' plans for '88, and at that time the outlook definitely wasn't healthy. Following in the wake of **Mediagenic/Activision's** clamp-down on Amstrad **Infocom** releases, many companies were holding back from giving us the titles we deserve, the excuse being that the Amstrad CPC market no longer justified the expense.

Walloppes of ye cod! We know what to say to that! Just look what happens when a company actually takes the risk and goes ahead: **Electronic Arts** converted *The Bard's Tale* for CPC's and what happens? The sales astonish them so much that now they're considering further releases. The truth is that the Amstrad market has always been a very strong one for adventures and remains so. Now that some shortsighted people are neglecting it there are some great opportunities for software houses to move in and give us something to play, making a profit in the process.

The good news is that this message may be sinking in. This month's round-up isn't nearly as pessimistic as the last one, and there are some very intriguing releases due out over the next six months. Here's the score...

## St. Brides

Ever wonder what happened to our old friends **St Brides**? After a few very individual games released through various outlets they're now programming a game for another Activision associated label, **Destiny**, set up by ex-Beyond man **Francis Lee**. Called *King*, it's 'based on a poem by Mark Pearson' and due for October release. It's a humorous *(sic)* tale of courage and valour (what adventure isn't?) in which hero Dog Boy takes on the King, a hideous beast, and leads his people to freedom. There's just one slight problemette. There is considerable doubt whether it will make it onto the Amstrad. Watch this space.

## Telecomsoft

**Firebird** recently released a very cute-looking icon-driven adventure on the ST called *Legend of the Sword* which raised the Pilg's hopes of further adventure software from this company and perhaps a release or two for the CPC. Alas, this is not to be.

What is on offer, though, is a new **Magnetic Scrolls** game. It certainly takes the biscuit in the strange scenario department. Called *Fish*, it celebrates the existence of a goldfish. Swimming around (upside down) in your aquarium, you discover the lost land of Aquaria, along with three mini-adventures. You have to enter the land, where the water system is polluted, and put everything to rights.

Apparently a vital feature of *Fish* is its puns. The game is stuffed full of them: you encounter the **Seven Deadly Fins**, for example. Hmmm... The Pilg is all for humour in games, but except for a couple of titles by **Infocom** and **Fergus McNeill**, I can't think of many that have been anything other than mildly embarrassing.

Meanwhile there has been the inevitable delay in getting CPC *Corruption* onto the shelves.

I've previewed this game, but look out for a full review.

## *Lancelot* on the horizon...

*Lancelot* should be on the shelves by the time you read this. Launched at the *PC Show*, it's a title we should all be watching out for with a great deal of interest.

The reason is simple – this one of **Level 9's** more important releases, certainly the most significant since they launched their new adventure system with *Knight Orc*. Lancelot is a game in a more serious vein that could have a strength of plot missing from the company's recent titles and comes at a time when releases from other companies on contemporary *(Corruption)* or role-playing *(Bard's Tale)* themes are making the adventure/ fantasy market more competitive than ever. **Level 9** badly need a Number One title to secure their reputation!



● Lancelot on the ST. Looks great, but CPC version still to be seen...

## Activision

After the release of the so-so *Mindfighter*, **Abstract Concepts** are now hard at work on *Parisian Knights*. We don't have details at the moment but it should come out later this year and will be for both tape and disk CPC's. Expect some great graphics, and hopefully some tweaks to the adventure system.

*Mindfighter* wasn't universally popular – The Pilg found it OK with one or two flaws – but fellow Pilgs should remember that it was AC's first release and they are bound to learn from experience. More news of *Parisian Knights* as we get it.

## Level 9

Hats off to a company who may have had to resign a portion of their reputation in favour of newcomers **Mag Scrolls**, but who are now the only major adventure software house giving full support to Amstrad owners. Yeah!

Apart from *Lancelot* we're also promised *Ingrid's Back* (see news story in last month's column). **Pete Austin** goes further and says: 'The good news for Amstrad owners is that we are now publishing ourselves as well as through **Mandarin** and we shall be putting out four titles a year, all of which are to be fully compatible with tape and disk CPCs'. Give them a big hand (or *Gros Main*. The s, again, is silent).

**Level 9's** next release after *Ingrid's Back* is still a closely guarded secret, but The Pilg was able to ascertain that it is set in the 1950's. 'It's a serious adventure, a moody piece', reports Pete, and for a Pilgrim who's just a little fed-up with **Level 9's** reliance on fantasy rather than simply on fiction, this sounds encouraging.

## Incentive

In the old GAC days, **Incentive** were quite active in supporting the Arnold market. Unfortunately the games were of questionable quality – not poor, by any means, but not earthshakers either. They also started off rather expensive for games produced using a utility and, because of GAC, suffered further by looking and playing in a similar fashion.

Sadly, however, the talk of an Advanced GAC turned into STAC - for the ST only – and since then the release of CPC games has dried up. Speaking for the company, **Ian Andrew** said that 'We would still release an adventure for the Amstrad if it was exceptional'. Some hope, then.

## Mandarin

The Pilg caught **Mandarin** on the hop, it seems. There are no published plans for CPC adventures after *Lancelot*, but the message coming through loud and clear was that this is simply cloak-and-dagger policy and that the company are even now rolling into action. Expect more Amstrad games from this label, whose message to is 'There are a lot of you out there, and we want to support you'. I'm sure they will and look forward to seeing what they've got to offer.

After *Time and Magik* and *Lancelot*, they have a high standard to keep up.

## Origin Systems

This company may not be known to fellow Pilgs, but I've included it because they've just released the superlative *Ultima V* for the PC and C64 and I was hoping they would be doing an Amstrad conversion. They're not.

The problem here is a common one and becoming increasingly prevalent in the UK. **Origin**, like **Activision, Electronic Arts** and **Microprose**, source a lot of their product in the States. There are no Amstrads in the States to speak of, so we don't get no games, OK?

No, it's not OK. It's understandable that an American programming outfit might not see any profit in supporting a minority machine in a small country across the sea, but that's no reason why the companies concerned can't give the conversion work to a team of British programmers. Come on lads! **EA** did it with *Bard's Tale*, so why not an Amstrad *Ultima* – it would sell and sell!

## Pilg programming lives!

First, a grovelling apology to all programming fans who've missed the series over the last three issues. The sad truth is that we never have **all** the time for **all** the things we want to do, or the space to fit them all in.

From now on, we'll be running our adventure programming course in every issue and printing new routines to add to your adventure as often as space permits. However, unlike other programming series, we won't simply be giving you lines of code to type in. Instead, we'll be designing 'command modules' that you can easily adapt for use in your own programs. Here's how it works (or is planned to..!).

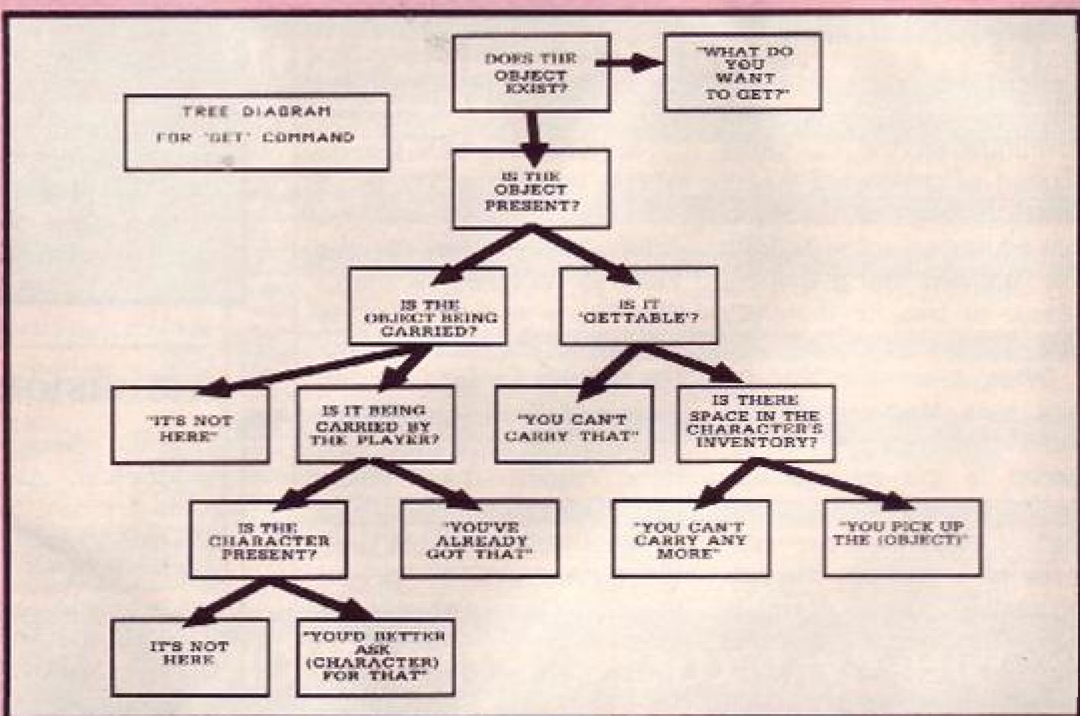
For each module, we first design a 'tree structure' (see *AA's* 21 and 24/25) that enables us to define the task concerned. We then code the structure and add into the program whatever data we want the module to operate on.

For example, we might want an ATTACK command. We first design the logic of this command, then code it, then enter into the program a series of messages that might need to be printed to the screen – 'Bash! Bang! Wallop!' for example, or 'You attack Cedric viciously with the axe'.

This month, however, we've going to start with something simple – the GET command. Here's a simple tree-diagram showing a series of 'decisions' and their consequences that we want the program to make when we enter the GET command (see figure below).

You can see that the process involves testing a series of conditions, each of which is stored as a value by the program. The most frequently tested conditions are obviously going to be those encoded in the object's status byte, the structure of which was explained in *AA32* and which is stored as the second of the two values in line 6030.

Next month we print the routine that executes this command, and also a DROP tree-diagram and routine. In the meantime, can you design your own DROP diagram? And can you think of any modifications that enable you to produce your own version? It's worth trying to do this because we'll also be showing you exactly how to introduce a tree-design into the program, so that you can enter your own if you wish. Flexibility is the name of the game!



## The Pilgrim's clue pot

**So you're stuck, eh? Stick your nose into this lot and cheer up. Help this month comes from those renowned honorary Pilgs, Thomas Page and Chris Dowling. We're a bit short of space, but still have room to bring you the much-requested *Bard's Tale* tips (thank you, Thomas) and a host of tips on *Rigel's Revenge.***

### The Bard's Tale

¶ **The best party order is to put your warriors and paladins in the front frow and the magic users, bards, and rogues behind.**

¶ Most enemise can be defeated by the Bard using his fire horn. Only creatures like Golems are uninjured by this weapon – most are killed.

¶ **It is best not to go into a dungeon unless your group is well armed.**

¶ If you don't have access to a conjurer to deactivate traps to use the rogue.

¶ **Monsters in the dungeons often leave treasure behind.**

¶ Wait until you reach the higher levels before taking on more than 2 groups at once, especialy if they include Orcs, Golems, or Barbarians.

¶ **If you need money pool all your money to one character and remove the rest. Get a new set of characters and pool the gold to the original character. Do this several time and you will have loads of money. Then use the merger program to recreate your original party with the surviving one with the money.**

¶ Spend your moeny on equipping the first 3 characters in order with the best weapons and armour as they are usually the ones who take the most punishment.

¶ ***Don't* cast a spell at your own team using 1-6 instead of A!**

¶ The Review Board is on Trumpet Street above the Inn.

### Get your Revenge on *Rigel's Revenge!*

Start off by finding and wearing the goggles and examining Elleot. Pull the bars hard, remove suit, wear medikit, press red button (you feel strong) and bend bars. Remove medikit, put all through window, and get out.

Push the bed to get the 'shape' (empty stun gun), then buzz off and get the bone. Retrace your steps and give bone to dog. Press the green button, jump the gap, go down and get chased to a crossroads.

Press the dipswitch in the tank, get the mine detector and wear the headphones.

Wear the uniform, drop the suit, and turn the dial at a later stage before entering the crater. This helps you find the bomb, which threatens to blow up, but won't.

Turn the dial again and you set the detector for mines. When challenged by guards, say anything – this wakes the bomb up and the introduce bomb to guards.

**Part 2**

Remove goggles, put them in the satchel, get the bomb, go north, drop the bomb, go south, and wait. Ooops! The bomb went off this time!

Charge your stun-gun by plugging it into the apparatus and then unplugging it again. There's a can under the bench.

The documents are in the seat – make sure you find and get the card which falls out of them...

Open and look inside the-case found in the dustbin. Later, get past the android by spraying paing on the lens, so it can't see where it's going (remember Snowball by Level 9?).

The flare in the case can be used against the monster. Best of luck with the rest!

## The Lords and Ladies of Adventure

You just don't deserve it. Why should these highly talented Pilgrims offer up prayers on your behalf? What's more, why should they go to the extreme lengths of writing into the Pilg with details of the games they've finished, prepared to help all comers?

The reason is these Lords and Ladies know the honour of being selected by the Pilg for this vital service is second only to the extreme pleasure they derive from communicating with fellow adventurers all around the world. Write to: **The Pilgrim, *Amstrad Action*, 4 Queen Street, BATH, BA1 1EJ.**

Forest at Worlds End, Gremlins, Heroes of Karn, Midnshadow, Message from Andromeda, Never Ending Story, Red Hawk, Spy Trek, Seabase Delta, SubSunk, Warlord, Spellbound, Knight Tyme, Storm Bringer.

**Robert Weir, 87 Burnside Rd, Gorebridge, Midlothian, EH23 4ET**

Beerhunter, Heroes of Karn, Never Ending Story, plus limited help on Redhawk and Rigels Revenge.

**Andrew MacDonald, Brookhouse Farm, Eccleshall, Staffs, ST21 6NE**

Kentilla, The Big Sleaze, Hobbit, Forest at the Worlds End

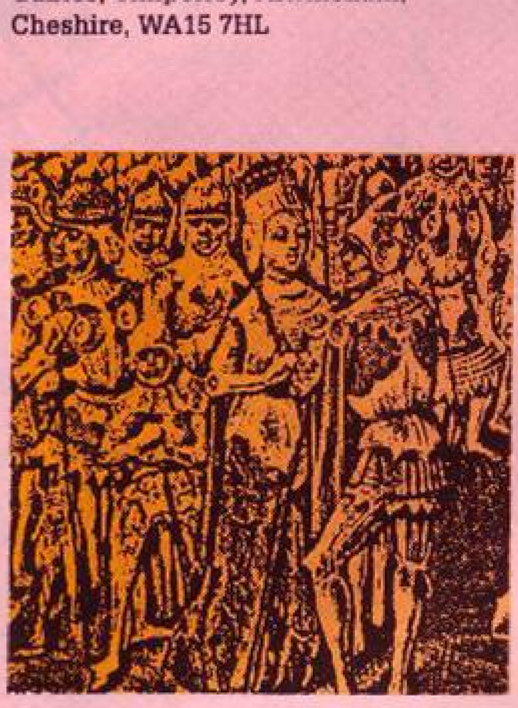
**David Liddell, 91 Orbiston Drive, Bellshill, ML4 2LX**

Star Wreck, Lurking Horror, Pawn, Khobyashi Naru, Gems of Stradus, Forest at Worlds End, Jewels of Babylon, Message from Andromeda, Heroes of Karn, Aftershock, Warlord, Red Moon, Snowball, Hobbit, Necris Dome, Souls of Darkon, Lords of Time, Theseus, Robin of Sherlock, Bugsy, Mordens Quest, Questprobe III, Very Big Cave Adventure, Boggit, Dodgy Geezers, Redhawk, Sorcerer, Hitchhikers Guide, Nythyhel, Brawn Free, Arnold Blackwood Trilogy, Fantasia Diamond, Espionage Island, Mindshadow, Inca Curse, Bored of the Rings, Emerald Isle, Spytrek, SubSunk, Hunchback, Seabase Delta, Never Ending Story, Knight Tyme, Circus, Sphinx Adventure, Woodbury End, Imagination, Stolen Lamp, Gremlins, Clasic Adventure, Dungeons Amethysts, Alchemists 'n' Everything, Beer Hunter, Zork 1, Dracula, Colossal Adventure, Tomb of Kuslak, The Mural, Rebel Planet, The Forth Protocol, Enchanter, Lord of the Rings Pt 2.

**Darren Stephens, 0795 73490**

Seastalker, Hitchhikers Guide to the Galaxy, Lurking Horror, Leather Goddesses of Phobos, Souls of Darkon, Red Moon, SubSunk, Kaiser, Seabase Delta, Warlord, Heroes of Karn, Message from Andromeda, Forest at the Worlds End, Classic Adventure, Worm in Paradise, DAA'n'Everything, Price of Magik, Return to Eden, Fantasia Diamond, Wildbunch and Experience. (Penpals also wanted).

**Stuart Whyte, 53 Ridgeway Road, The Gables, Timperley, Altrincham, Cheshire, WA15 7HL**



## *Dark Side* – the map

**Michael Dickinson** sent us this superb guide to Incentive's second Freescape epic. We passed it over to the art dept, and they turned Mike's map into this indispensable guide to the *Dark Side!*

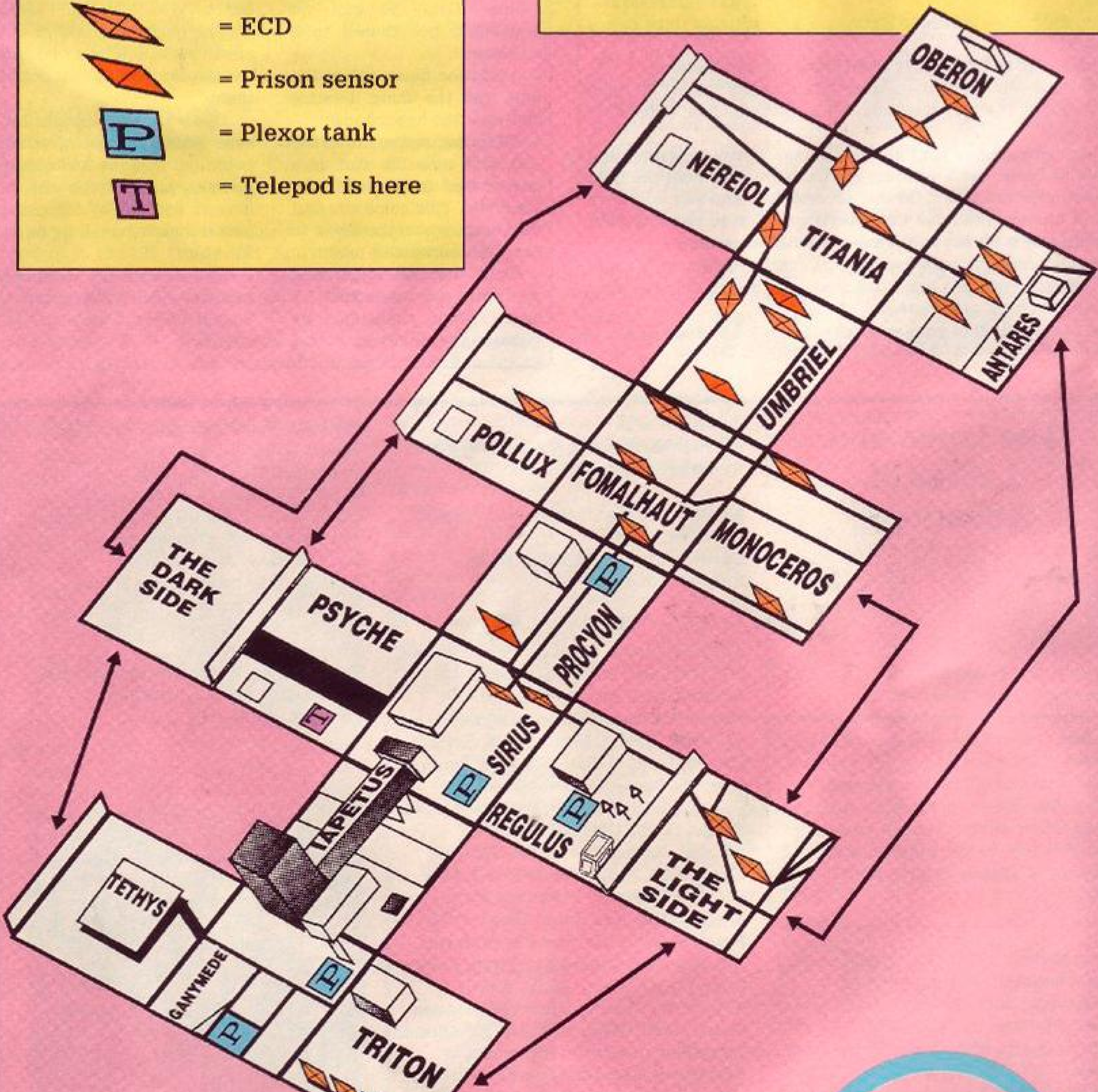
### Key

= ECD

= Prison sensor

= Plexor tank

= Telepod is here




SOFTWARE WINNER

## Thundercats

Elite's chop-em-up gets poked by **Julian Page** of Shrewsbury. Type in the poke, but leave out any lines that you don't want to use. RUN it with the disk in the drive.

```
1 'Thundercats - disk
2 'By Julian Page
3 'Amstrad Action Oct 88
4 'Leave out unwanted lines
5 'Don't remove lines 1Ø-8Ø
1Ø DATA 45,4C,49,54,45,2E,1A1
2Ø DATA 42,49,4E,21,4B,9B,1EØ
3Ø DATA 36,Ø9,C3,5F,85,21,2Ø7
4Ø DATA 8Ø,BE,11,ØØ,8Ø,Ø6,1D5
5Ø DATA Ø9,CD,77,BC,EB,CD,3C1
6Ø DATA 83,BC,E5,CD,7A,BC,427
7Ø DATA 21,AB,BE,22,12,Ø9,1C7
8Ø DATA C9,ØC9
9Ø 'Death brings next level
1ØØ DATA 3E,B9,32,Ø4,81,1AE
11Ø '9 lives at start
12Ø DATA 3E,Ø9,32,7A,78,16B
13Ø 'No limit to extra lives
14Ø DATA 3E,FF,32,AB,79,293
15Ø 'Lives bonus gives 9 lives
16Ø DATA 21,89,BE,11,A6,21F
17Ø DATA 79,Ø1,Ø8,ØØ,ED,BØ,21F
18Ø 'Bonus always gives life
19Ø DATA AF,32,CA,9A,245
2ØØ 'Fewer creatures
21Ø DATA AF,32,3A,82,19D
22Ø 'No creatures at all
23Ø DATA 3E,C9,32,51,81,2ØB
24Ø 'Invulnerable to creatures
25Ø DATA AF,ED,62,32,E1,97,3A8
26Ø DATA 22,E2,97,32,54,9A,2BB
27Ø DATA 22,55,9A,111
28Ø 'Invulnerable to Mumm-Ra
29Ø DATA AF,32,26,99,1AØ
3ØØ 'Bonus Pts give laser gun
31Ø DATA 21,D4,9A,36,3E,23,226
32Ø DATA 36,Ø3,23,36,77,ED,1F6
33Ø DATA 62,22,DA,9A,22,E1,9A,395
34Ø 'LionO walks on water
35Ø DATA 3E,18,32,8A,7B,18D
36Ø 'LionO floats after jump
37Ø DATA 3E,C3,32,Ø1,7D,1B1
38Ø 'LionO flies!
39Ø DATA ED,62,AF,22,85,2A5
4ØØ DATA 7B,32,87,7B,1AF
41Ø 'Do not remove!
42Ø DATA C3,D6,69,JPS
43Ø L=1Ø
44Ø READ A$:IF A$="JPS" THEN
   GOTO 5ØØ
45Ø IF LEN(A$)<3 THEN 48Ø
46Ø CK=VAL("&"+A$):IF CK<>C THEN
   GOTO 55Ø
47Ø C=Ø:GOTO 44Ø
48Ø V=VAL("&"+A$):POKE X,V
49Ø C=C+V:X=X+1:GOTO 44Ø
5ØØ MODE 1:CALL &BBFF
51Ø PRINT"INSERT DISC THEN"
52Ø PRINT"PRESS ANY KEY !!"
53Ø CALL &BBØ3:CALL &BBØ6
54Ø CALL &BE91
55Ø PRINT"DATA ERROR"
```

# The black box

Most games are heavily protected these days, resulting in longer pokes.

Many of you have one of the infamous black boxes that can be used to stop programs – the **Multiface 2** from Romantic Robot for example.

Often the only thing that they're used for is transferring games from tape to disk, but they can also be used to hack games for infinite lives etc.

This new occasional section is for owners of the **Multiface 2** and similar devices so that they can poke games without typing in huge listings.

**Here's how you enter them:**

- Plug the **Multiface** into the expansion slot at the back of your keyboard. (**Multiface 2** owners: make sure that the switch on the front is in the up position.)
- Load the game that you want to poke in the usual manner following the instructions supplied with it. (**Multiface 2** owners: move the switch to the down position after it has loaded.)
- Press the red button on the **Multiface** and a menu appears at the bottom of the screen. Press 'T' for tool and then 'H' to change input to hexadecimal.
- Press the spacebar and type in the number under the Addr column. Next type in the number under the Poke column. Repeat this process until you've entered all of the pokes that are listed for the game and then press 'ESC'.
- Press 'R' to return to the game: it then runs with the pokes that you've just entered.

| Game | Addr | Poke | Effect |
|---|---|---|---|
| *Arkanoid* | 2Øf3 | ØØ | Inf lives |
| *Super R. Hood* | 6c97 | ØØ | invulnerable |
| *Zynaps* | 5f7e | ff | 255 lives |
| | 6139 | c9 | rapid fire |
| *Living Daylights* | 2ced | ØØ | Inf energy |
| | Ø727 | Ø2 | level (Ø1-Ø8) Ø2 for level Ø2 |
| *Wizball* | a93a | a7 | } |
| | a92b | c3 | } Inf lives |
| *Scooby Doo* | 7683 | ff | Inf lives |
| *Freddy Hardest* | 8afa | a7 | Inf lives |
| *3D Starfighter* | 7f3a | ØØ | } |
| | 7f15 | ØØ | } Inf shields |
| *Who Dares Wins 2* | 631a | ØØ | } |
| | 6Øc1 | ØØ | }Inf lives |
| *Dark Side* | 6f7b | a7 | } |
| | 6eØa | a7 | } |
| | 658Ø | 18 | } |
| | 6581 | 1b | } Inf fuel+shields |
| | 6e2Ø | ØØ | } |
| | 6e3e | ØØ | } Inf time |
| | 7a19 | ØØ | } |
| | 7a1a | ØØ | } Stop ECD's regenerating |

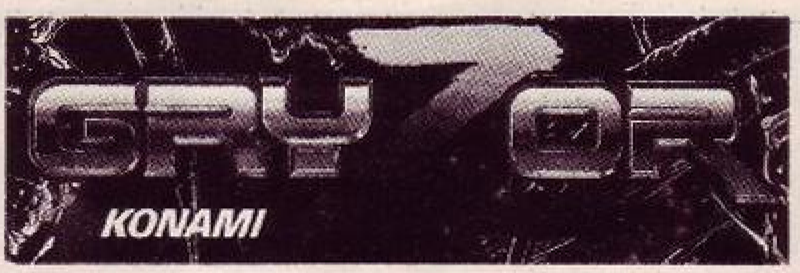
**Note: a bracket } indicates that pokes are connected: e.g. on *Wizball* both a93a, a7 *and* a92b,c3 need to be entered to gain Inf lives. So on *Dark Side* you need to enter *four* pokes to gain Inf fuel & shields.**

## Win an ENTIRE ISSUE'S RAVES!

**To win an entire issue's *Rave* software – and that includes the *Mastergame* – all you have to do is produce an excellent map, poke or set of playing tips.**

**The best solution each month wins a copy of every *Rave* and the *Mastergame* of that issue. The number of games varies of course, but in a good issue it can be half a dozen. We also give runner-up prizes every month of a *Rave* or the *Mastergame*.**

**This month's winner of the *Raves* and the *Mastergame* is Michael Dickinson for his excellent *Dark Side* map. The runners up who receive either a *Rave* or the *Mastergame* are Mike Wong and Julian Page. Well done chaps, you deserve it!**




**Julian Page** of Shrewsbury has had a busy month's hacking. This time the tape version of Ocean's arcade conversion gets the treatment. **(Method 1.)**

```
1 'Gryzor - Disc
2 'by Julian Page
3 'Amstrad Action Oct 88
1Ø DATA DD,7E,ØØ,32
2Ø DATA ØØ,BE,21,2E
3Ø DATA A1,ØE,Ø7,CD
4Ø DATA D4,BC,22,2F
5Ø DATA A1,21,85,1C
6Ø DATA 11,ØØ,ØØ,ØE
7Ø DATA 42,DF,2F,A1
8Ø DATA D5,11,ØØ,Ø2
9Ø DATA 19,D1,ØC,DF
1ØØ DATA 2F,A1,21,A8
11Ø DATA 1C,Ø1,AØ,Ø3
12Ø DATA 3E,2Ø,16,ED
13Ø DATA F5,AE,AA,77
14Ø DATA 57,14,23,ØB
15Ø DATA 78,B1,28,Ø7
16Ø DATA F1,C6,ØD,E6
17Ø DATA 7F,18,ED,21
18Ø DATA BB,1C,F1,Ø1
19Ø DATA 8D,Ø3,3E,41
2ØØ DATA F5,AE,77,23
21Ø DATA ØB,78,B1,28
22Ø DATA Ø7,F1,C6,ØB
23Ø DATA E6,7F,18,FØ
24Ø DATA F1,21,C8,1C
25Ø DATA Ø1,7E,Ø3,35
26Ø DATA 23,ØB,78,B1
27Ø DATA 2Ø,F9,21,E9
28Ø DATA 1C,Ø1,5F,Ø3
29Ø DATA 3E,1B,F5,AE
3ØØ DATA 77,23,ØB,78
31Ø DATA B1,28,Ø7,F1
32Ø DATA C6,Ø9,E6,7F
33Ø DATA 18,FØ,21,33
34Ø DATA 1D,F1,Ø1,15
35Ø DATA Ø3,3E,4C,CD
36Ø DATA 18,A1,21,63
37Ø DATA 1D,Ø1,E5,Ø2
38Ø DATA 3E,45,CD,18
39Ø DATA A1,21,71,1D
4ØØ DATA Ø1,D7,Ø2,34
41Ø DATA 23,ØB,78,B1
42Ø DATA 2Ø,F9,3E,2B
43Ø DATA 21,8D,1D,Ø1
44Ø DATA BB,Ø2,F5,AE
45Ø DATA 77,23,ØB,78
46Ø DATA B1,28,Ø7,F1
47Ø DATA C6,Ø9,E6,7F
48Ø DATA 18,FØ,21,FF
49Ø DATA 1D,11,55,A8
5ØØ DATA D5,Ø1,49,Ø2
51Ø DATA F3,ED,BØ,21
52Ø DATA D2,AØ,22,D3
53Ø DATA A8,C9,3A,ØØ
54Ø DATA BE,47,CB,4Ø
55Ø DATA 28,Ø5,3E,B7
56Ø DATA 32,26,15,CB
57Ø DATA 48,28,Ø4,AF
58Ø DATA 32,66,Ø5,CB
59Ø DATA 5Ø,28,Ø4,AF
6ØØ DATA 32,57,18,CB
61Ø DATA 58,28,ØE,3E
62Ø DATA 18,32,31,ØE
63Ø DATA 21,ØØ,ØØ,22
64Ø DATA BD,1Ø,22,C3
65Ø DATA 1Ø,CB,6Ø,28
66Ø DATA Ø5,3E,18,32
67Ø DATA Ø1,17,21,76
68Ø DATA 19,36,4A,23
69Ø DATA 36,2E,23,36
7ØØ DATA 5Ø,C3,19,Ø4
71Ø DATA E5,D1,F5,AA
72Ø DATA 96,AB,77,23
73Ø DATA ØB,78,B1,28
74Ø DATA Ø7,F1,C6,ØE
75Ø DATA E6,7F,18,EE
76Ø DATA F1,C9,84,ØØ
77Ø DATA ØØ,Ø7,ØØ,42
78Ø FOR X=&AØØØ TO &A132
79Ø READ A$:A=VAL("&"+A$)
8ØØ POKE X,A:C=C+A
81Ø NEXT X
82Ø IF C=&7ØBD THEN 84Ø
83Ø PRINT"CHECK DATA.":END
84Ø C=1:X=Ø:DEFSTR A,B
85Ø A="INFINITE LIVES"
86Ø GOSUB 1Ø1Ø
87Ø A="NO TIME-OUT"
88Ø GOSUB 1Ø1Ø
89Ø A="NO WALL BLASTERS"
9ØØ GOSUB 1Ø1Ø
91Ø A="INVULNERABILITY"
92Ø GOSUB 1Ø1Ø
93Ø A="WRAP-ROUND FIRE"
94Ø GOSUB 1Ø1Ø
95Ø PRINT"INSERT GRYZOR"
96Ø PRINT"DISC ,   PRESS"
97Ø PRINT"ANY KEY."
98Ø CALL &BBØ3
99Ø CALL &BBØ6
1ØØØ CALL &AØØØ,X
1Ø1Ø CLS:PRINT A:B=""
1Ø2Ø WHILE B=""
1Ø3Ø B=INKEY$:WEND
1Ø4Ø B=UPPER$(B)
1Ø5Ø X=X OR C*ABS(B="Y")
1Ø6Ø C=C*2:RETURN
```

## Outrun

**Mike Wong** of Sale has poked US Gold's racing game for infinite time or a longer time limit. Type in the poke and then RUN it with the *Outrun* disk in the drive.

```
1 ' Outrun-disk
2 ' by Mike Wong
3 ' Amstrad Action Oct 88
1Ø MODE 2:MEMORY &7FFF:z=27Ø
2Ø FOR n=&8ØØØ TO &812Ø
   STEP 16
3Ø FOR p=Ø TO 15
4Ø READ a$:b=VAL("&"+a$)
5Ø POKE n+p,b:c=c+b
6Ø NEXT:READ x$
7Ø d=VAL("&"+x$)
8Ø IF c<>d THEN 26Ø
9Ø z=z+3Ø:c=Ø:NEXT
1ØØ INPUT"Infinite time (y/n)";a$
11Ø IF a$="n" THEN 14Ø
12Ø POKE &8ØE1,&37
13Ø POKE &8ØE2,&3Ø:GOTO 24Ø
14Ø INPUT"How many seconds
   (Ø-99)";a
15Ø IF a>1Ø THEN 19Ø
16Ø POKE &8ØE1,&3Ø
17Ø POKE &8ØE2,a+&3Ø
18Ø GOTO 22Ø
19Ø a$=STR$(a)
2ØØ POKE &8ØE1,&3Ø+
   VAL(MID$(a$,2,1))
21Ø POKE &8ØE2,&3Ø+
   VAL(RIGHT$(a$,1))
22Ø FOR n=&8ØDØ TO &8ØDF
23Ø POKE n,Ø:NEXT
24Ø PRINT"Insert OUTRUN
disc...":CALL &BB18
25Ø CALL &8ØØØ:END
26Ø PRINT"Error in line";z;"-
   ";z+2Ø:END
27Ø DATA cd,1c,81,21,Øc,8Ø
28Ø DATA 22,14,Ø1,c3,ØØ,Ø1
29Ø DATA 31,fa,bf,cd,5c9
3ØØ DATA ee,8Ø,21,85,1c,Øe
31Ø DATA 23,cd,Ø6,81,3e,4c
32Ø DATA 32,a2,4c,32,591
33Ø DATA a5,4c,3e,c3,32,fd
34Ø DATA 4f,21,2d,8Ø,c3,1Ø
35Ø DATA 81,21,a8,1c,677
36Ø DATA Øe,13,cd,Ø6,81,3e
37Ø DATA 4c,32,ba,4c,21,4Ø
38Ø DATA 8Ø,c3,1Ø,81,56c
39Ø DATA 21,bb,1c,Øe,Øe,cd
4ØØ DATA Ø6,81,3e,4c,32,c7
41Ø DATA 4c,21,53,8Ø,52b
42Ø DATA c3,1Ø,81,21,61,8Ø
43Ø DATA 22,e7,1c,3e,56,21
44Ø DATA d5,1c,c3,19,5fd
45Ø DATA 81,21,6f,8Ø,22,2e
46Ø DATA 1d,3e,7a,21,Øe,1d
47Ø DATA c3,19,81,21,48Ø
48Ø DATA 7d,8Ø,22,5e,1d,3e
49Ø DATA 21,21,3e,1d,c3,19
5ØØ DATA 81,21,63,1d,473
51Ø DATA Øe,Ød,cd,Ø6,81,3e
52Ø DATA 4d,32,6e,4d,21,96
53Ø DATA 8Ø,22,fe,4f,58d
54Ø DATA 21,39,2Ø,c3,63,4d
55Ø DATA 21,7c,1d,Øe,11,cd
56Ø DATA Ø6,81,3e,4d,4a5
57Ø DATA 32,8c,4d,21,b1,8Ø
58Ø DATA 22,fe,4f,3e,61,21
59Ø DATA 7c,4d,c3,19,631
6ØØ DATA 81,21,aa,1d,11,8Ø
61Ø DATA a9,Ø1,8f,Ø2,ed,bØ
62Ø DATA 21,8Ø,be,22,653
63Ø DATA 5c,aa,21,dØ,8Ø,11
64Ø DATA 8Ø,be,Ø1,1a,ØØ,ed
65Ø DATA bØ,c3,d5,a9,7bf
66Ø DATA 21,ae,2Ø,36,ØØ,23
67Ø DATA 36,ØØ,23,36,ØØ,21
68Ø DATA 23,21,36,18,28a
69Ø DATA 21,39,39,22,96,Ø3
7ØØ DATA c3,ØØ,Ø1,53,5Ø,c3
71Ø DATA ØØ,Ø1,21,85,41f
72Ø DATA 1c,11,85,6c,Ø1,cØ
73Ø DATA Ø3,ed,bØ,c9,21,85
74Ø DATA 6c,11,85,1c,6Øc
75Ø DATA Ø1,cØ,Ø3,ed,bØ,c9
76Ø DATA Ø6,ØØ,7c,c6,3Ø,57
77Ø DATA 5d,ed,bØ,c9,7bc
78Ø DATA 22,fe,4f,cd,fa,8Ø
79Ø DATA c3,85,4c,ed,4f,e9
8ØØ DATA 21,ØØ,Ø1,11,7a2
81Ø DATA ØØ,ØØ,Øe,41,df,28
82Ø DATA 81,c9,3c,cØ,Ø7,ØØ
83Ø DATA ØØ,ØØ,ØØ,ØØ,3a3
```

## Dark Side

The theme continues as *AA34's Mastergame* is hacked by **Mike Wong** of Sale to give you infinite fuel, shields, time and to prevent the ECD's from regenerating. **(Method 1.)**

```
1 ' Dark Side-tape
2 ' by Mike Wong
3 ' Amstrad Action Oct 88
1Ø OPENOUT"d":MEMORY &F9F
2Ø CLOSEOUT:LOAD"DARKSIDE"
3Ø POKE &1ØØ2,&E1
4Ø POKE &1ØØ3,&C9
5Ø n=&BE8Ø
6Ø READ a$:IF a$="*" THEN 9Ø
7Ø POKE n,VAL("&"+a$)
8Ø n=n+1:GOTO 6Ø
9Ø CALL &FAØ:CALL &BE8Ø:END
1ØØ 'INFINITE SHIELDS & FUEL
11Ø DATA 3e,a7,32,7b,6f,32
12Ø DATA Øa,6e,21,18,1b,22
13Ø DATA 8Ø,65
14Ø 'INFINITE TIME
15Ø DATA af,32,2d,6e,32,3e
16Ø DATA 6e
17Ø 'PREVENT ECDs REGENERATING
18Ø DATA 21,ØØ,ØØ,22,19,7a
19Ø REM LEAVE
2ØØ DATA c3,62,1c,*
21Ø END
```

**Mike Wong's** poke has been adapted to run with the disk version of Incentive's game. Type in the poke and RUN it with the *Dark Side* disk in the drive.

```
1 ' Dark Side-disk
2 ' Amstrad Action Oct 88
10 MEMORY &3FFF
20 LOAD"dark",&4000
30 DATA 3e,c9,32,0b,40,cd
40 DATA 00,40,af,32,81,00
50 DATA cd,51,00
60 'Infinite Shields & Fuel
70 DATA 3e,a7,32,7b,6f,32
80 DATA 0a,6e,21,18,1b,22
90 DATA 80,65
100 'Infinite Time
110 DATA af,32,2d,6e,32,3e
120 DATA 6e
130 'Prevent ECD's regenerating
140 DATA 21,00,00,22,19,7a
150 'Leave next line
160 DATA c3,62,1c
170 FOR n=&BE80 TO &BEAC
180 READ a$
190 a=VAL("&"+a$)
200 POKE n,a
210 NEXT n
220 CALL &BE80
230 END
```






The cassette version of Infogrames shoot-em-up is another on the **Julian Page** hit list. **(Method 1.)**

```
1 'Prohibition-tape
2 'By Julian Page
3 'Amstrad Action Oct 88
1Ø DATA 21,ØD,4Ø,11
2Ø DATA 4Ø,ØØ,D5,Ø1
3Ø DATA 64,ØØ,ED,BØ
4Ø DATA C9,DD,7E,ØØ
5Ø DATA 32,ØØ,ØØ,11
6Ø DATA 8Ø,3F,21,ØØ
7Ø DATA CØ,E5,CD,AØ
8Ø DATA ØØ,21,E6,ØØ
9Ø DATA 11,ØØ,4Ø,D5
1ØØ DATA CD,AØ,ØØ,D1
11Ø DATA D5,E1,CD,AØ
12Ø DATA ØØ,21,ØØ,8Ø
13Ø DATA 11,ØØ,2Ø,D5
14Ø DATA CD,AØ,ØØ,D1
15Ø DATA E1,E5,D5,CD
16Ø DATA AØ,ØØ,F3,C1
17Ø DATA E1,11,ØØ,AØ
18Ø DATA ED,BØ,3A,ØØ
19Ø DATA ØØ,47,CB,4Ø
2ØØ DATA 28,ØB,21,69
21Ø DATA ØB,36,ØØ,23
22Ø DATA 36,18,23,36
23Ø DATA Ø1,CB,48,28
24Ø DATA Ø4,AF,32,8E
25Ø DATA 19,CB,5Ø,28
26Ø DATA Ø5,3E,B7,32
27Ø DATA B1,ØF,C3,75
28Ø DATA Ø9,AF,C3,A1
29Ø DATA BC,ØØ,ØØ,ØØ
3ØØ FOR X=&4ØØØ TO &4Ø73
31Ø READ A$:A=VAL("&"+A$)
32Ø POKE X,A:C=C+A
33Ø NEXT X:MODE 1
34Ø IF C=&2BA8 THEN 36Ø
35Ø PRINT"DATA ERROR":END
36Ø C=1:X=Ø:DEFSTR A,B
37Ø A="INFINITE LIVES"
38Ø GOSUB 46Ø
39Ø A="GUNMEN CAN'T FIRE"
4ØØ GOSUB 46Ø
41Ø A="ENDLESS HIDE-TIME"
42Ø GOSUB 46Ø
43Ø INK Ø,3:INK 1,26
44Ø INK 2,13:INK 3,Ø
45Ø CALL &4ØØØ,X
46Ø CLS:PRINT A:B=""
47Ø WHILE B=""
48Ø B=UPPER$(INKEY$)
49Ø WEND
5ØØ X=X OR C*-(B="Y")
51Ø C=C*2:RETURN
```

## Shorten the odds

- We receive dozens of pokes, and the ones published tend to be on cassette or disk, unless they're very short (get the hint?).
- Include an SAE if you want your disk or tape returned.
- Make sure your name and address is on everything you send us!

## *POKE METHODS ON TAPE*

Here's how to input most *Cheat Mode* tape pokes – the instructions for each poke tell you which of the two to use. 664 and 6128 owners: first type |tape.

### *METHOD 1*

Rewind the game tape to the beginning, type in the poke listing and then type RUN and press the Enter key. (Don't use the key marked CTRL or Control, or the poke won't work.) Press the Play key on the cassette deck, then any key on the main keyboard - spacebar does nicely. The tape should now play through as normal.

### *METHOD 2*

Skip the first bit of the game program. To do this, rewind the game tape to the beginning; type in the listing; now type CAT and press Enter. Start the tape by pressing Play and then any key. Soon you'll see the message: 'Found something Block 1'. It doesn't matter what the something is, and it varies from game to game. If the *Cheat Mode* instructions just tell you to skip the first block, stop the tape here.

If the instructions tell you to skip things, stop the tape when the 'Found' message comes up for the last thing you're trying to skip.

Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape.

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This list could not have been compiled without the assistance of Deian Lye, who was with us for a week on work experience. We've sent him a little something to express our gratitude.

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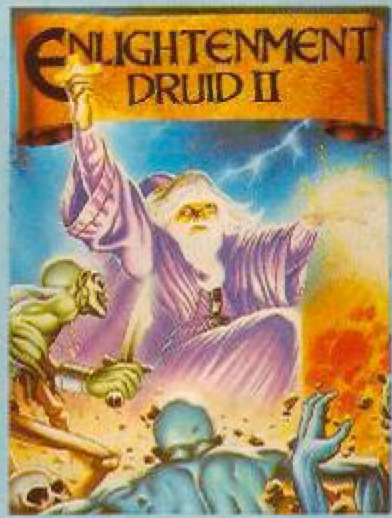
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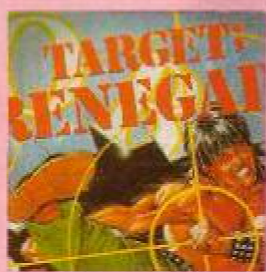
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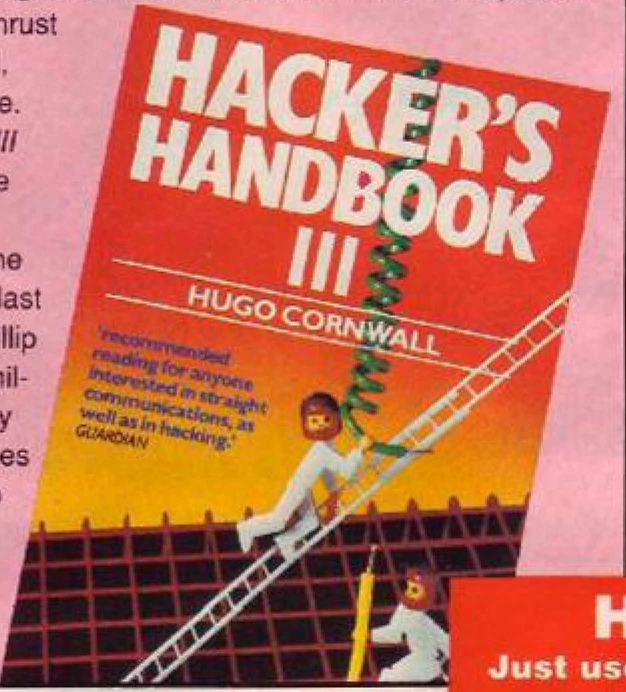
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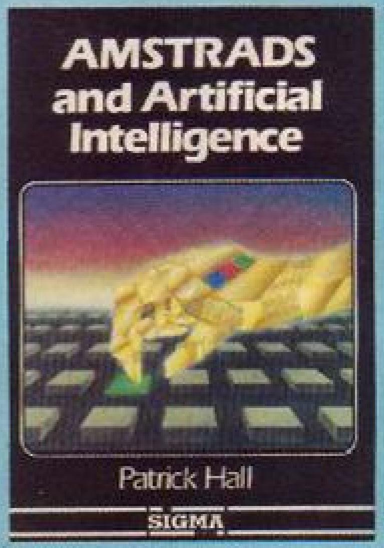
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SPECIAL OFFERS

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Issues 8 and 16 may be of particular interest, as both include free cassettes packed with good software. Two series also went down very well. Andrew Wilton's programming course in Basic for absolute beginners ran from issues 8-17, while a series of articles on the CP/M operating system ran from 10-17.

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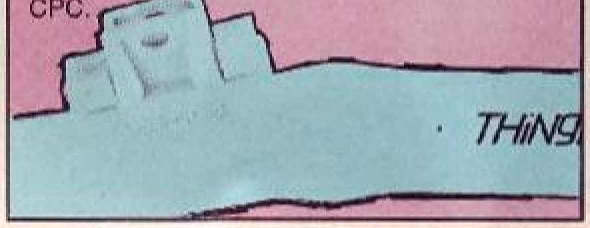
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